FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

AUGUST, 1952

OHIO STATE

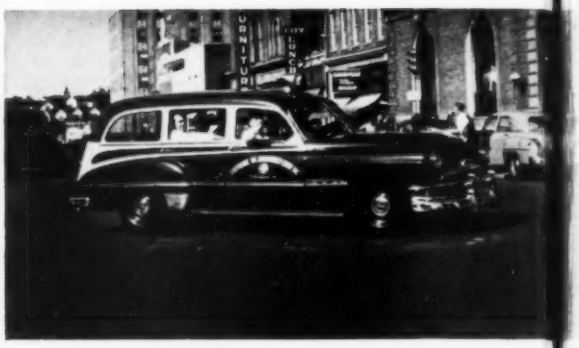
1877 **75th** 1952

ANNIVERSARY

AND FIRE CHIEFS' CONFERENCE ISSUE

A CASE - SHEPPERD - MANN PUBLICATION

Salem Rescue Squad

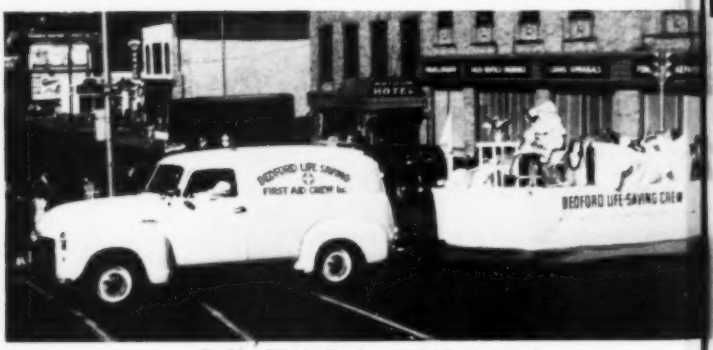


Southside, Va., Emergency Crew

Roanoke Life Saving and First Aid Crew

Lexington Life Saving and First Aid Crew

Bethesda - Chevy Chase Rescue Squad



Bedford Life Saving and First Aid Crew

Some of the rescue cars in the parade of the International Rescue and First Aid Association at its 1951 convention.

Do you, too, carry an Emerson to protect the lives of your men and your community?

EMERSON RESUSCITATORS **EMERSON IRON LUNGS**

J. H. EMERSON COMPANY

18 COTTAGE PARK AVENUE, CAMBRIDGE 40, MASSACHUSETTS

- Rotates 360° flashing protection to every angle!
- Not one but *two* beams mounted back to back!
- Protects you even when vehicle is stopped, 360° flashing gives you an "island" of protection!
- Simple to install, weatherproof, trouble-free!
- A truly distinctive signal that can't be missed!

FEDERAL BEACON RAY LIGHT

THE ONE DISTINCTIVE 360° FLASHER

The WARNING PAIR THAT GETS YOU THERE BETTER THAN ANY OTHER

FEDERAL NEW Q SIREN

THE *LOUDEST* SIREN OF THEM ALL!

- Completely new!
- Loudest, most penetrating siren on the market!
- New clutch gives exceptionally-long coasting period.
- New motor gives greater sound volume with less current than many smaller sirens.
- Rugged, precision-built — today's *ultimate* in sirens!

Only Federal makes and sells the sensational Q siren and distinctive Beacon Ray Light. Write now for bulletins.

FEDERAL ENTERPRISES, INC.

Formerly: FEDERAL ELECTRIC COMPANY, INC.

8702 SOUTH STATE STREET CHICAGO 19, ILLINOIS

FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION *and* FIRE SERVICE

VOL. 105 AUGUST, 1952 No. 8

	Page
With the Editor By Fred Shepperd	615
Seventy-Five Years of Progress in Fire Control By Fred Shepperd	616
The Fireman of Yesterday, Today and Tomorrow	623
Communications a Major Factor in Fire Attack and Control By Roi B. Woolley	625
Rescue and First Aid Service Continues Steady Advance A Special Report	628
Rural Fire Fighting—A Review Past, Present and Future	632
Indirect Application of Fog—Some Interesting Results	637
Fire Service Ladders and Their Use By Roi B. Woolley	640
Industrial Fire Fighting By W. E. Rossnagel	643
Pay and Working Conditions—Seventy-Five Years of Progress	645
Legal Hazards Encountered by Fire Departments on Highway By William Jerome Daly, Jr.	646
First "Borough Call" in Years Sounded for Brooklyn Blaze	647
Old Fire Engines Never Die—They Merely Fade Away By Charles R. Roever	649
Procedures for Recovery of Bodies of Victims from Drowning By George B. Johnson	656
With Our Readers	658
Portrait Section	659
News of the Manufacturers	668
The Round Table The Use of Power Boats by Fire Departments	672
Short Cuts and Gadgets	674
The Watch Desk By Roi B. Woolley	676
False Alarms	678
What's Burning?	681
Among the Buffs By Paul C. Ditzel	696
World-Wide Fire News By Roi B. Woolley	698
Convention Dates	700
Questions and Answers	702
Obituaries	705
Fog Nozzles, Two-Way Radio Pride of Copenhagen By Paul C. Ditzel	706
Reports Received	717
Persons in the News	720

FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York 18, N. Y., also publishers of *Water Works Engineering*, *Wastes Engineering*, etc. ¶Subscription price: U. S. Latin America and Canada, $3.50 a year; Foreign, $4.50; Single copies, 40c. ¶Member of Audit Bureau of Circulations and Associated Business Publications, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 5, 1879.

¶Contents of this issue copyrighted, 1952, by Case-Shepperd-Mann Publishing Corp.

President and Advertising Director, KARL M. MANN; Vice-President and General Manager, I. HERBERT CASE; Secretary and Editorial Director, FRED SHEPPERD; Assistant Advertising Director, WALTER H. FREDERICKS; Eastern Representatives, WILLIAM J. GIBSON, ALFRED J. HOUGHTON; Circulation Manager, W. H. TOPHAM. CHICAGO OFFICE: L. M. ROCHE and ROBERT D. CLEVENGER, 8 So. Dearborn St., Chicago 3, Ill.; LOS ANGELES: AUGUST HAURIN, 6000 Miramonte Blvd., Los Angeles 1, Calif. ¶Printed in U.S.A.

CASE-SHEPPERD-MANN PUBLISHING CORPORATION

24 West 40th Street, New York 18, N. Y.

FABRIC 288 TWILL

THE ONLY

DOUBLE SURFACE FIRE HOSE

BALANCED DIAGONAL TWILL WOVEN WAX AND PARA GUM IMPREGNATED GENUINE

CABLE CONSTRUCTED COTTON RUBBER LINED MUNICIPAL FIRE HOSE

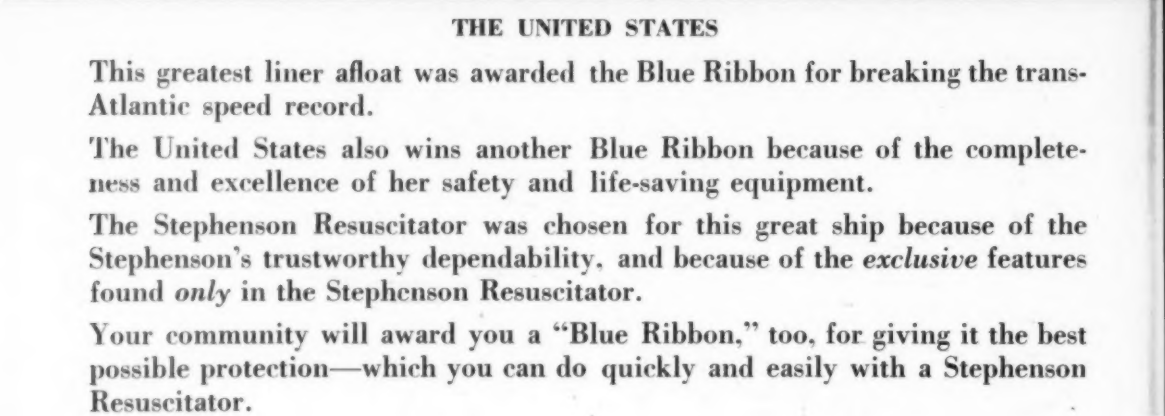
MADE BY

THE ONLY EXCLUSIVE MANUFACTURER OF FIRE HOSE IN AMERICA

FABRIC FIRE HOSE CO.

1860 SANDY HOOK, CONN. 1952

Chief, You Too Can Win a Blue Ribbon!



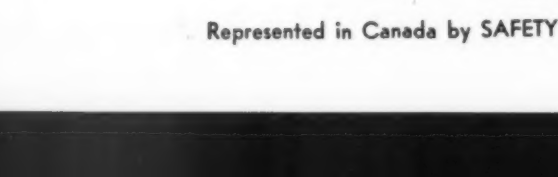
THE UNITED STATES

This greatest liner afloat was awarded the Blue Ribbon for breaking the trans-Atlantic speed record.

The United States also wins another Blue Ribbon because of the completeness and excellence of her safety and life-saving equipment.

The Stephenson Resuscitator was chosen for this great ship because of the Stephenson's trustworthy dependability, and because of the *exclusive* features found *only* in the Stephenson Resuscitator.

Your community will award you a "Blue Ribbon," too, for giving it the best possible protection—which you can do quickly and easily with a Stephenson Resuscitator.



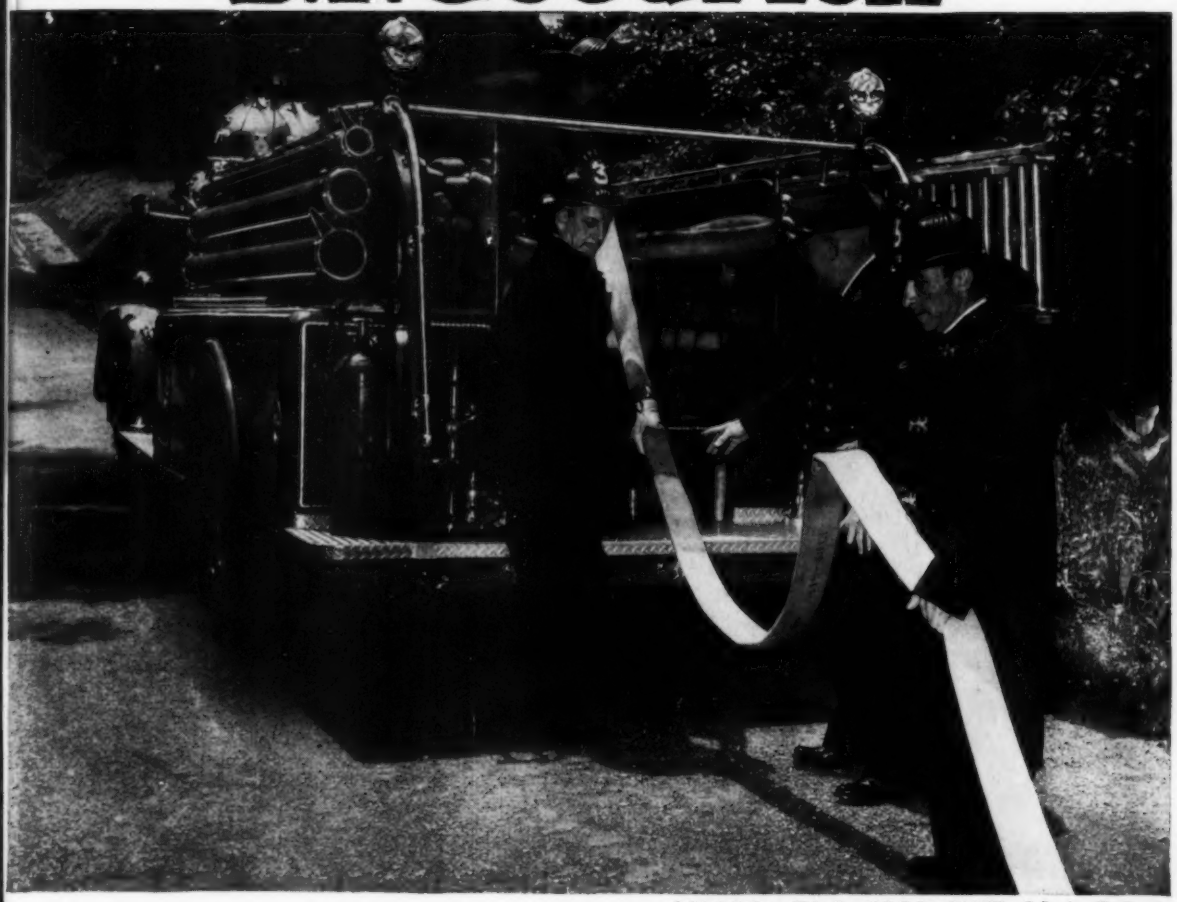
See the Stephenson Resuscitator at the I.A.F.C. convention in Boston, Booth 21 — or write us today!

Protect Your Community
Enhance Your Department's Good Will
WITH THE
STEPHENSON RESUSCITATOR

STEPHENSON CORPORATION
RED BANK NEW JERSEY

Represented in Canada by SAFETY SUPPLY COMPANY of Toronto

RESEARCH KEEPS **B.F.Goodrich** FIRST IN RUBBER



Left to right: George White, Kenneth V. Stalker, Chief William C. Donahue, Nick Berardo.

Highland Park racks 400 extra feet with B. F. Goodrich hose

"WE'VE used B. F. Goodrich hose for years," writes Chief William C. Donahue, of the Highland Park, N. J. Fire Department, "and it has met the exacting tests placed upon it in every emergency. So when we heard about the new, improved B. F. Goodrich hose, called Fire King, we ordered 1450 feet of it, and found it was so much lighter and more flexible we could rack *400 extra* feet of it on our truck bed."

Other firemen who have handled Fire King agree with Chief Donahue that it's light to carry, easy to handle, and can be quickly racked or coiled. It's 15% lighter, much more flexible because of a recently-developed, chemically-produced fiber, which is used exclusively in Fire King as "filler cords" —the reinforcing cords that go *around* the hose and carry the load under pressure. Compared with cotton filler cords used in other hose, this new fiber has three times the strength for the same weight of cord.

Stands higher pressures — Actual service tests prove that Fire King, tested to 600 lbs. pressure, is 50% stronger than standard fire hose which is tested to only 400 lbs. pressure.

100% more strength in coupling area —The coupling area is the danger area in fire hose. That's where, in ordinary hose, cracks and blowouts occur, due to pressure, flexing, strain. In BFG hose this cause of hose failure has been eliminated by adding an extra layer of hard-woven cords that extends 12" back from the coupling. Not one single length of B. F. Goodrich hose with patented end-protection has ever failed in the coupling area.

Before you buy another length of fire hose, let your nearby BFG Fire Hose Distributor show you a sample of Fire King and quote on your requirements. You'll find that although the initial cost of Fire King is slightly higher, it's really your most economical buy because it lasts longer. *The B. F. Goodrich Company, Industrial & General Products Division, Akron, Ohio.*

Fire Hose
BY
B.F.Goodrich

Helping You Cut Fire Losses

As leading manufacturers of fire fighting equipment, Rockwood makes many products that contribute vitally to the quick extinguishment or effective control of all kinds of fires. On these pages are representative Rockwood products that daily play a vital role in fire protection programs throughout the nation.

For further details on these products, and many, many others, write for your free copy of the Rockwood Catalog, "Fire Fighting Products." ROCKWOOD SPRINKLER COMPANY, 54 HARLOW STREET, WORCESTER 5, MASS. Distributors in all principal cities.

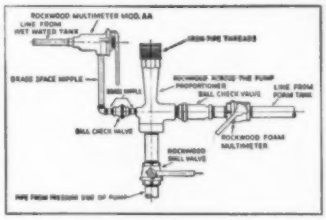
ROCKWOOD

See the Latest Rockwood Products on Display in Boston during the Convention of the International Association of Fire Chiefs — Booths #1-2-3.

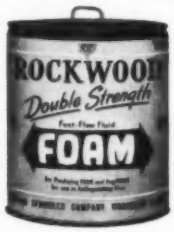
Type FFF FogFOAM Nozzle. Discharges FogFOAM, Solid FOAM stream, and High Velocity WaterFOG.

Type SG-48 WaterFOG Nozzle. Easy to handle. Discharges high or low velocity WaterFOG or straight water stream.

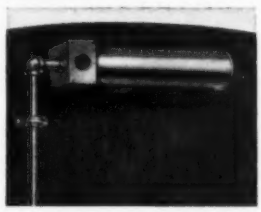
Foam Eductor. Introduces FOAM liquid into hose lines. Used with Type FFF FogFOAM Nozzles.



Proportioning Systems. Used when pressure is maintained by pump. Custom-engineered systems also available.

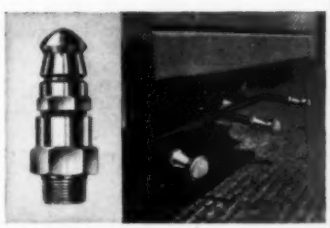


Double Strength Foam Liquid for fire hose line Nozzles and permanently piped FogFOAM and FOAM installations.



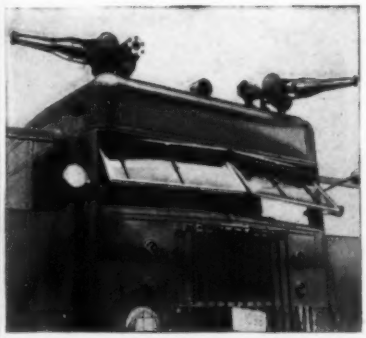
Rockwood Foam Maker and Chamber. Used for fighting flammable liquid tank fires.

Standard Straight Foam Play Pipe and FOAM pick-up tube. Discharges solid FOAM stream.



Under Truck and Ground Sweep Nozzles. Used to protect front of fire trucks and parts under trucks.

ROCKWOOD
SPRINKLER COMPANY

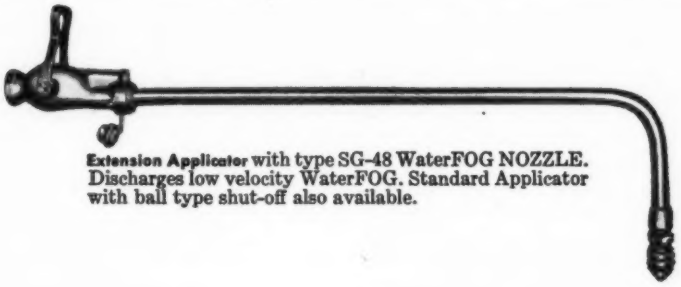


Hydraulically or Manually Controlled Type FFF FogFOAM Turret Nozzle for airport crash fire fighting trucks and special fire fighting trucks for oil refineries, chemical and industrial plants and municipalities.

Lightweight Rotating Cellar and Attic Pipe. Fights fires in cellars, attics, under piers, bridges, etc. Also available in a short unit with swivel but without extension barrel.

Type SG-60 Nozzle with FF Extension Unit. Five different kinds of discharge from only one nozzle.

Rockwood Ball Type Shut-Off. Gives operator complete control of water flow from nozzles.

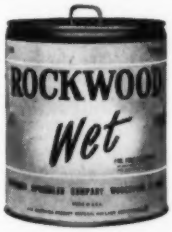


Extension Applicator with type SG-48 WaterFOG NOZZLE. Discharges low velocity WaterFOG. Standard Applicator with ball type shut-off also available.

High Capacity WaterFOG Nozzle. Quickly controls and extinguishes large fires in buildings and flammable liquids.

Type N22 WaterFOG Nozzle. Discharges high velocity WaterFOG. For general use around live electrical equipment.

Rockwood Type N-23 WaterFOG Nozzle with swivel handles. Discharges high velocity WaterFOG with higher discharge, greater range than type N-22 Nozzle.



Rockwood Wet wetting agent. Increases fire extinguishing action of water making a little water go a long way.

Engineers Water . . . to cut fire losses

ILLUSTRATIONS SHOWN ¾ ACTUAL SIZE

Blackinton's popular Cap, Collar, and Lapel insignia available in several finishes—all with colorful hard enamel centers. Ask your supplier to show you the complete line of BLACKINTON BADGES the next time he calls. Be sure to specify BLACKINTON BADGES.

IF YOU COULD LOOK
OVER THE SHOULDER OF
HUNDREDS OF FIRE CHIEFS...

—you would see five good reasons why more and more departments are switching to—

BLACKINTON BADGES

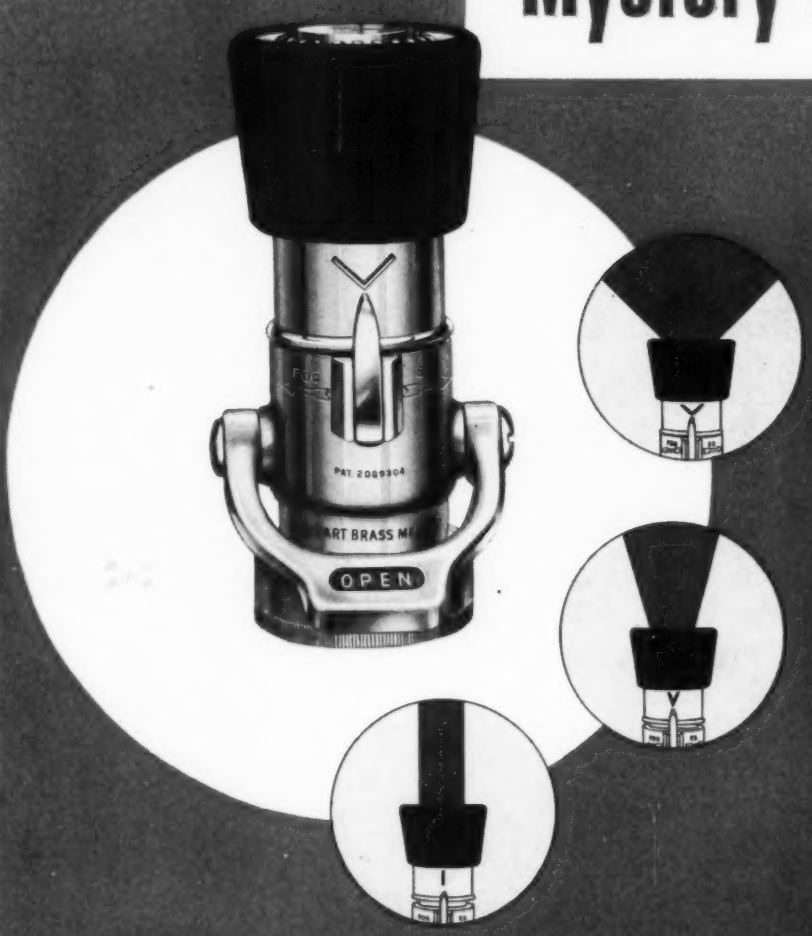
1. *Expert Die Work*
2. *Long Lasting Mirror Finish*
3. *Precise Lettering*
4. *Smooth, Hard Enamel*
5. *Custom Design Service*

All backed by 100 years experience in the uniform insignia business.

BLACKINTON
V. H. BLACKINTON & CO., INC., ATTLEBORO FALLS, MASS.

Uniform suppliers are welcome to the BLACKINTON display at the I.A.F.C. Convention, Booth 51 — August 25-28.

Select-O-Stream Mystery Nozzle



WITH THESE EXCITING FEATURES

SET TO ANY STREAM WITHOUT LOOKING
Embossed stream indicators automatically "tell" your fingers—selects the stream

☆

SHUTS OFF IN ANY POSITION

☆

SET TO TURN ON IN ANY POSITION

☆

LOCKS TO THE STREAM YOU CHOOSE

☆

SEPARATE BALL TYPE SHUT OFF
(Brass to neoprene seat)

☆

IMPROVED GRIP—
serves as both grip and bumper. Mechanically sealed—it won't come off

You get the stream you want—at a finger's touch. And you get it fast. No need to see it . . . the embossed (Braille-like) Stream indicators "tell" your fingers by touch. The SELECT-O-STREAM *MYSTERY NOZZLE* locks to the stream you choose. Shuts off in any position. Set to turn on in any position. Protective curtain of water at the wide "V" . . . 30° fog at the standard "V" . . . Straight Stream at the "I"—and any degree of stream in between. *Be sure to write for literature now!*

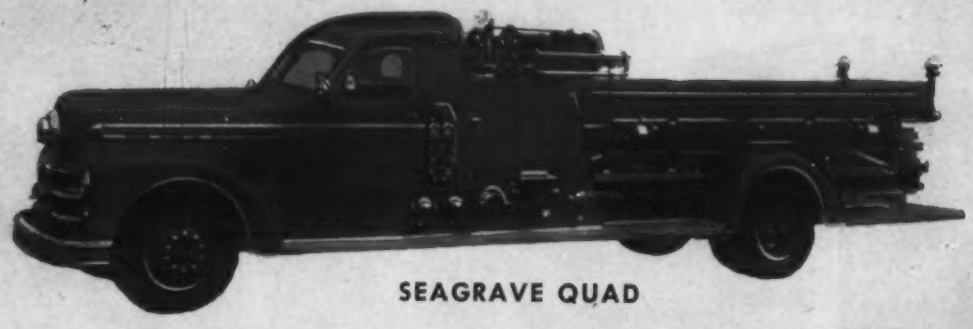
ELKHART BRASS MFG. CO., Inc.

1902—*FIFTY YEARS OF FIRE FIGHTING PROGRESS*—1952

ELKHART, INDIANA

Yesterday Today and Tomorrow

. . . IT'S SEAGRAVE FOR THE WORLD'S MOST DEPENDABLE FIRE APPARATUS

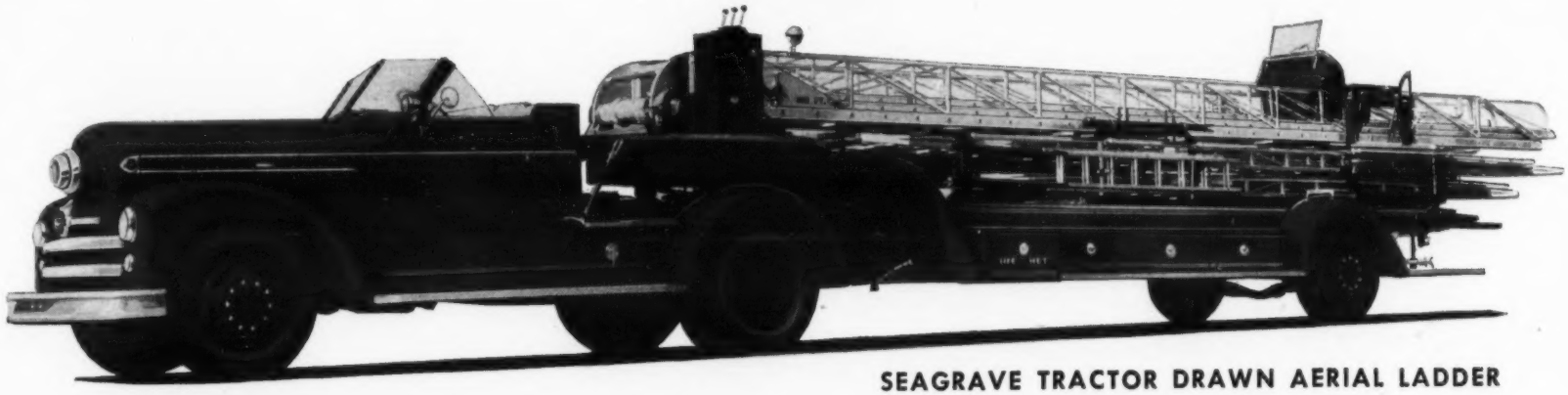


SEAGRAVE QUAD

For more than seventy years Seagrave has been the leader in Fire Apparatus construction. Many of the big improvements that have made the job of fire fighting more efficient have originated with Seagrave. There's a reason for this. The entire thinking and planning of Seagrave engineers is devoted to better apparatus. The famous Seagrave V-12 engine is designed for fire service. The pumps, the bodies, the ladders, the frames and other principal parts are made in the Seagrave factory exclusively for fire apparatus. That's why the nation's fire services have learned throughout the years that they can depend upon Seagrave. It is the Seagrave construction that makes the difference between ordinary fire apparatus and a SEAGRAVE

SEAGRAVE CANOPY CAB PUMPING ENGINE

SEAGRAVE CANOPY CAB PUMPING ENGINE



SEAGRAVE TRACTOR DRAWN AERIAL LADDER

SEAGRAVE SERVICE AERIAL LADDER TRUCK

THE SEAGRAVE CORPORATION
Columbus, Ohio
Bickle-Seagrave, Ltd-Woodstock, Ont.

Seagrave

THE GREATEST NAME IN FIRE APPARATUS

SAFEST FOR YOU
SAFEST FOR YOUR COMMUNITY

Flaw-proof Republic Rubber Fire Hose, made with **counterbalanced** fabrics firmly united with specially compounded, friction-reducing tubes, offers you maximum economy combined with the highest possible degree of protection. There's a special type of Republic Fire Hose designed for your requirements . . . a hose specially treated to stand up against mildew and other storage hazards. Ask your local Republic Distributor to make a free analysis of your needs or write direct for information about this long-term protection for you and your friends.

INDUSTRIAL RUBBER PRODUCTS BY
REPUBLIC RUBBER DIVISION
Lee Rubber & Tire Corporation
YOUNGSTOWN, OHIO

Bendix

most experienced builder of communication radio systems

announces

the finest Mobile Radio ever built

with clear channel construction

THE TRAFFICMASTER
Mobile Communications Equipment

Here at last is the final answer to your Mobile Radio Communication problems. This new Bendix* Command-Air Series, operating on the VHF band, combines every desirable construction and performance feature to meet not only today's requirements, but to anticipate the needs of tomorrow's operating conditions.

For example, field tests demonstrate that selectivity, sensitivity and watt output for current imput are *better than any other mobile radio.* Channels can be easily modified when and if the F.C.C. decides to modify existing channel spacing.

Fewer tubes and fewer components mean less maintenance. But if service or adjustment is required complete accessibility to transmitter, receiver and power supply is quickly accomplished by a ¼ turn of key lock at a single point release lid.

In addition to this latest type of mobile radio equipment, Bendix now offers a complete line of land stations from 2½ to 250 watts output as well as accessories such as handsets, microphones, speakers, antennas and shockmounts—plus all technical assistance in obtaining licenses and complete systems engineering.

In short if you are interested in the finest mobile radio communications get in touch with Bendix, the most experienced builder of communication radio systems.

*REG. U.S. PAT. OFF.

BENDIX RADIO DIVISION OF Bendix AVIATION CORPORATION
BALTIMORE 4, MARYLAND
West Coast Sales Office: 10500 Magnolia Blvd., N. Hollywood, Calif.

BENDIX FINANCE PLAN

It's a *save and pay* as you go plan. Write for complete information.

...Bendix "Trafficmaster" is competitively priced...quick delivery ...send for literature.

Bendix

THE MOST TRUSTED NAME IN

Radio

WAUKESHA ENGINES

WAUKESHA MOTOR COMPANY • WAUKESHA, WISCONSIN

NEW YORK TULSA LOS ANGELES

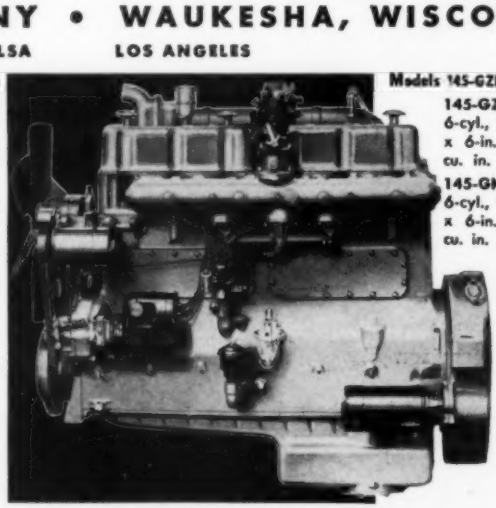
Models 140-GZB and 140-GKB

140-GZB — 200 hp, 6-cyl., 4⅛-in. bore x 5½-in. stroke, 554 cu. in. displacement.

140-GKB — 190 hp, 6-cyl., 4½-in. bore x 5½-in. stroke, 525 cu. in. displacement.

•

Send for Bulletin 1584



Models 145-GZB and 145-GKB

145-GZB — 250 hp, 6-cyl., 5⅜-in. bore x 6-in. stroke, 817 cu. in. displacement.

145-GKB — 240 hp, 6-cyl., 5¼-in. bore x 6-in. stroke, 771 cu. in. displacement.

•

Send for Bulletin 1594

164

AMOUS INDIANS:

Bob Feller

KE PITCHER OF THE CLEVELAND INDIANS)

UTS OUT THE IRE" with

NDIAN IRE PUMPS

Bob Feller, famous pitcher for the Cleveland Indians and winner of 3 no-hit major league games, is expected to have another excellent year in the 1952 season.

ob Feller guards his rural estate ith **INDIAN FIRE PUMPS** since he nows these outstanding extinuishers will take care of any mergency that occurs.

ow is your supply of **INDIAN FIRE UMPS?** Now is the time to order. e prepared. An ample supply of **NDIAN FIRE PUMPS** is your first ssurance of adequate equipment handle all calls.

ou, too, can "put the fire out" in hurry if you have plenty of these **AMOUS INDIANS.**

re you ordered **INDIAN FIRE PUMPS For Civil Defense?**

INDIAN FIRE PUMPS are your best bet for extinguishing indoor and outside fires quickly—before they spread. 5 gal. tank carries on back like a pack basket leaving arms free. *Send for circular giving full details.*

. B. SMITH & CO.

406 MAIN ST.
UTICA 2, N. Y.

PACIFIC COAST BRANCHES

ulles Equipment & ber Company, Inc 35, Brannan Street Francisco 7, California

G. Davis Company 7 East Third Street Angeles, California

Fred E. Barnett Company 2005 S. E. 8th Ave. Portland, Oregon

Fred E. Barnett Company 600 Spring Street Klamath Falls, Oregon

Titan Chain Saws, Inc. 2700 Fourth Avenue South Seattle, Washington

L. N. Curtis & Sons 426 West Third Street South Salt Lake City, Utah

CANADIAN AGENTS

Flock Bros. Limited 110 Alexander Street Vancouver, B. C., Canada

C. E. Hickey & Sons, Ltd Hamilton, Canada

"*If we were in the market for a new 2-way radio system,*

we'd want to buy Motorola again . . . a preference we feel is entirely justified by the excellent performance and minimum service requirements of the equipment, and the constantly alert cooperation of local Motorola engineers."

The above statement is typical of those received by Motorola several times each week from police, fire and municipal officials in every part of the country. It explains in a few words, why Motorola is the predominant choice in the field of 2-way radio.

Motorola
2-way radio

Three going into deadly smoke
and fumes . . . Three will come
out—You can bet your life on
Scott Air-Pak
TRADE MARK
Literature on request.
Scott
FOR SAFETY - FOR SERVICE

SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

215 ERIE STREET LANCASTER, N. Y.

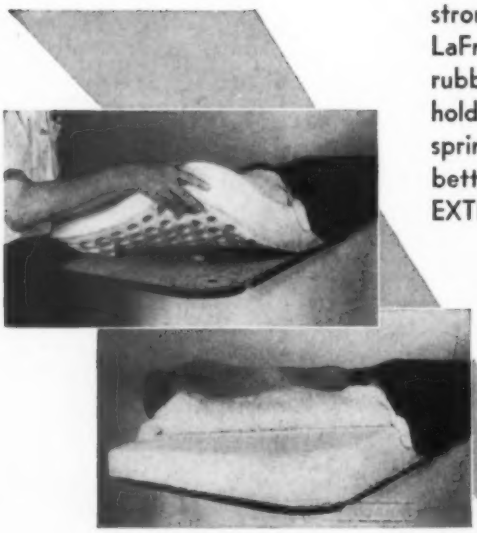
Canada: Safety Supply Co., Toronto — Branches in principal cities

Export: Southern Oxygen Co., 157 Chambers Street, New York 7, N. Y.

IN AMERICAN-LAFRANCE FIRE ENGINES

Genuine Leather Covered Sponge Rubber Seat Cushions

For longer seat life, better riding qualities and strong resistance to weather, every American-LaFrance Fire Engine is equipped with sponge rubber cushions, both seat and back. These seats hold their shape, no packing down, no broken springs. American-LaFrance fire engines are better fire engines with these EXCLUSIVE EXTRA VALUES.



Top, sponge rubber cushion being placed on seat. Center, genuine leather cover being installed and right, completed cushion in fire engine.

One of the Houston, Texas, Invader Model 750 g.p.m. pumpers.

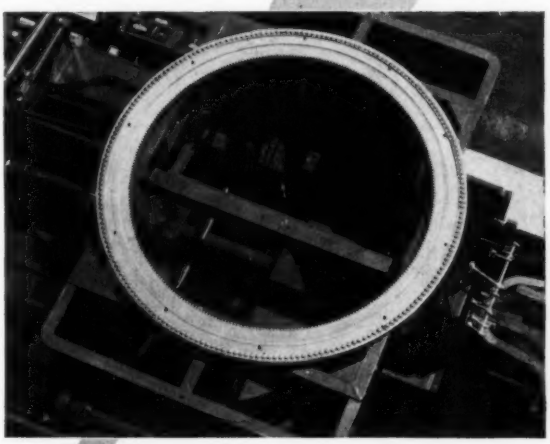
* Eleventh in a series of advertisements showing the EXCLUSIVE EXTRA VALUES in American-LaFrance Fire Engines.

THERE'S *Extra Value* FOR YOU ···

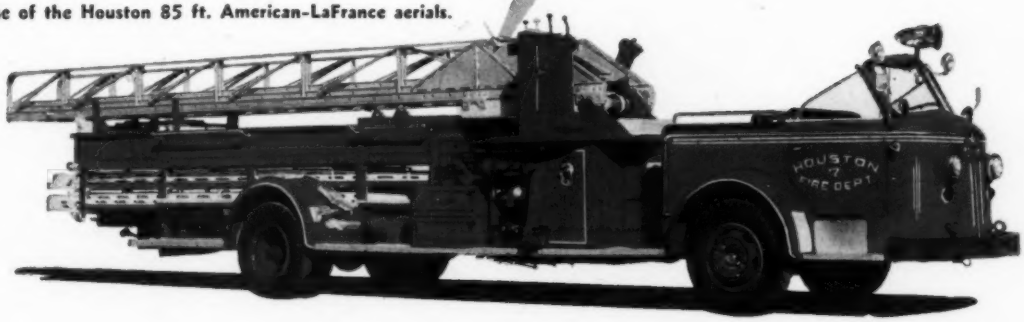
Largest Aerial Turntable Mechanism In Use Today . . . 65 Inches in Diameter

For sturdy, reliable ladder performance under all conditions, American-LaFrance Aerials are equipped with the largest turntable mechanism in use today. It measures 65 INCHES in diameter. In the top ring upon which the ladder platform rotates there are 210 three-quarter inch ball bearings for the smoothest, easiest ladder turning with greatest stability. Underneath the top ring, a second turning ring is equipped with 380 one-half inch ball bearings to insure maximum ease and safety in performance.

These Extra Values, and all the other exclusive Extra Values, in American-LaFrance Fire Engines, are reasons why Houston, Texas, recently purchased 18 American-LaFrance cab-ahead-of-engine pumpers and aerials. This recent delivery in Houston includes eight Model Invader 750 g.p.m. pumpers, four Model Empire 1000 g.p.m. pumpers, two 65 ft., two 85 ft. and two 100 ft. aerials.



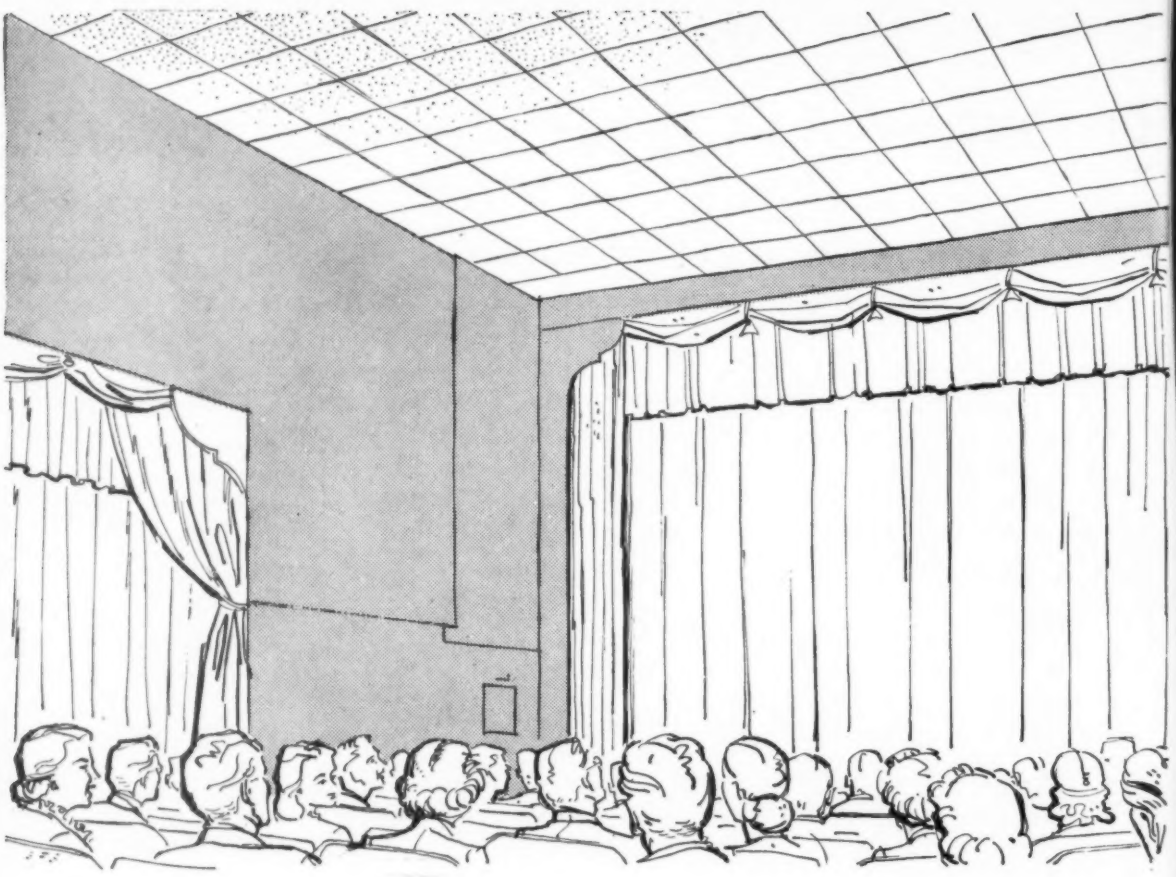
One of the Houston 85 ft. American-LaFrance aerials.



● *For details of these Extra Values and MANY MORE, write for illustrated booklet.*

AMERICAN-LAFRANCE-FOAMITE CORPORATION
ELMIRA, NEW YORK, U. S. A.

LAFRANCE FIRE ENGINE AND FOAMITE LIMITED
TORONTO 9, ONTARIO, CANADA



. . . where beauty and quiet must be "FIRE SAFE"

In theaters, auditoriums, restaurants, night clubs—wherever people gather—the prevention of fire is the concern of every community. And fire prevention is being achieved with fire safe Fiberglas* textiles and acoustical ceilings. In addition, these materials bring new, fresh beauty and comfort . . . values that make them unique. But the fact that they are rated "non-combustible" by accepted standards of testing makes them indispensable tools for public safety.

For complete information on Fiberglas textiles and acoustical products, including reports on their fire safe ratings, contact your nearest Fiberglas branch office, located in principal cities, or write to: Owens-Corning Fiberglas Corporation, Textile Division, New York, N. Y.; or Owens-Corning Fiberglas Corporation, Sound Control Products, Toledo, Ohio.

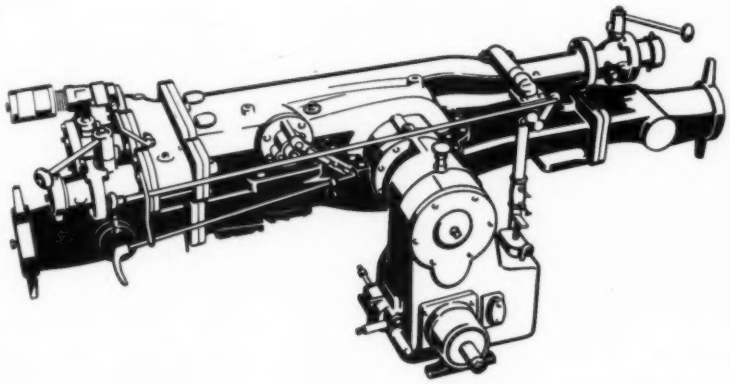
*Fiberglas is the trade-mark (Reg. U.S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with fibers of glass.

IF IT'S OWENS-CORNING FIBERGLAS IT'S FIRE SAFE!

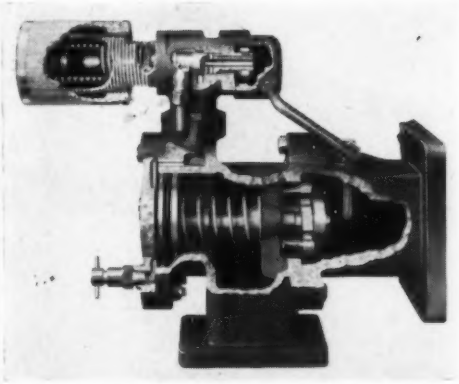
Specify HALE

Because HALE Fire Pumps are known for:

- **DEPENDABILITY AND HIGH EFFICIENCY**
- **FLEXIBLE PERFORMANCE PROVIDING VOLUME AND PRESSURE WHEN NEEDED**
- **CONSTANT RESEARCH RESULTING IN CONSTANT IMPROVEMENT**
- **SOLD ONLY THROUGH MANUFACTURERS OF QUALITY APPARATUS**



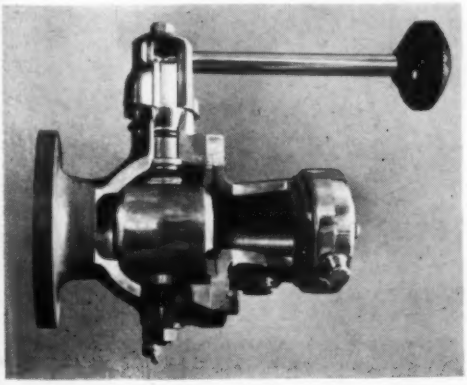
HALE Fire Pumps are built in all standard capacities. They range from the Centrifugal ZMHD 2-stage, Underwriters' rating 1500 U.S.G.P.M. at 150 lbs., down to Type GS Single Stage Centrifugal, Underwriters' ratings 500 and 600 U.S.G.P.M. at 150 lbs.; also rotary Booster Pumps Type HHB, H and 2HB 100 to 200 U.S.G.P.M. at 100 to 200 lbs. pressure.

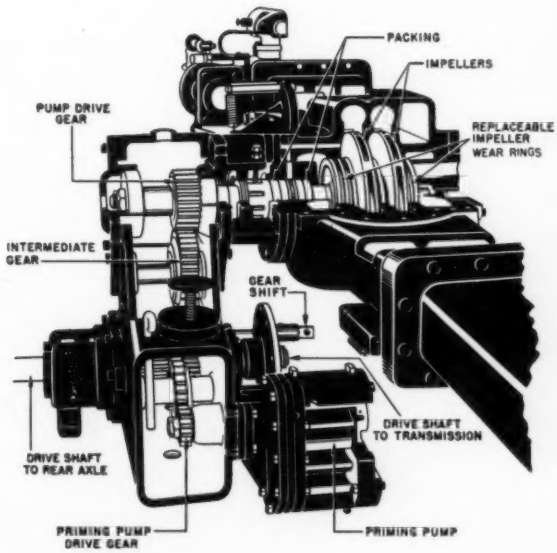


Here are two popular and proved accessories important to the efficient operation of Fire Pumps.

Above—Cut-away View of HALE Ideal Relief Valve.

Below—Cut-away View of HALE Type BL Discharge Valve.





WRITE FOR NEW CIRCULARS AND NEW BULLETINS JUST PRINTED, OF INTEREST TO ALL FIRE FIGHTERS

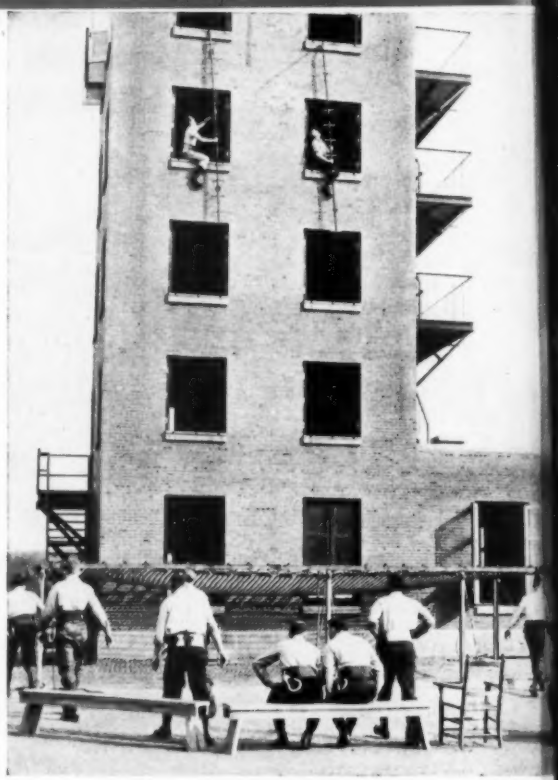
HALE
FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

It's always ATLAS

TRAINING NETS for drill tower work can save serious injury to your men—at the same time giving them greater confidence while training. The construction of training nets is a highly specialized job—and we have been producing them for fire departments in all parts of the country.

Every drill tower should be protected with modern rope nets. Nets are tightened by a pull on a single lacing line through edges of net, keeping net horizontal so men can walk on it, giving plenty of working area. Atlas enclosed type shock absorbers give the net the necessary resiliency to absorb shock of falling body. Rope intersections are non-slip to insure proportional strain over entire net. Complete information will be furnished. Get this ***before*** you plan your drill tower.

Come to ATLAS for all net requirements!



Photos show Atlas Training Nets in use in Syracuse, New York. You'll find them in many other cities, too.

ATLAS *Always "SPECIFY" by name—***ATLA**

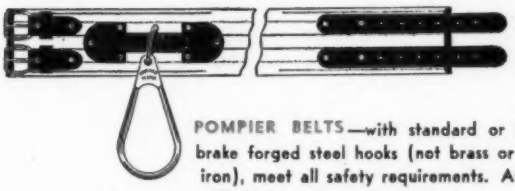
SAFETY EQUIPMENT CO., INC

for NETS

LIFE AND TRAINING NETS

The World's Finest Life Nets

The excellency of ATLAS Life nets has resulted in their use in fire departments the world over. Hundreds of them are put to daily use, giving ample evidence of their popularity, excellent construction and usefulness. No department should be without an Atlas Life Net—every pumper (first to arrive) should carry one and be ready to put it to use. Quarter and half fold available—any truck manufacturer will be glad to provide space for one on new trucks. Always SPECIFY ATLAS—on all new trucks!



POMPIER BELTS—with standard or hand brake forged steel hooks (not brass or cast iron), meet all safety requirements. Ask for ATLAS forged steel hooks.

CRASH AXE—Axe and handle one piece forged steel. Moulded rubber insulated handle tested for 20,000 volts. Well balanced. Note unique cutting edge and pick for quick cutting and ripping. Heat treated and hardened cutting edge for metal cutting or ripping. Standard equipment on aircraft. With or without leather sheath.

27 WARREN ST., NEW YORK 7, N. Y.

Let Gerstenslager design and build your rescue car the way you want it.

Some safety departments call it a rescue car; others call it an emergency unit, first aid truck, or squad car. Different sizes, designs, and equipment are needed for different localities—some metropolitan, some suburban, others semi-rural. Gerstenslager individualized construction meets all requirements. Due to Gerstenslager methods, with specialized experience and specialized plant equipment, a modern advanced type of rescue unit can be designed and built to your individual specifications at moderate cost.

A member of our nationwide staff of field sales engineers will help you to get the exact type of vehicle for your requirements.

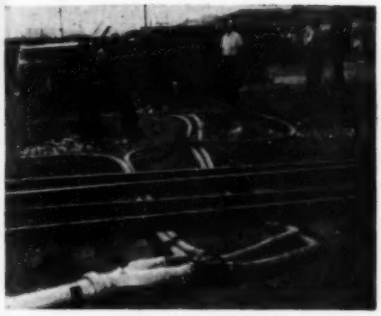
THE GERSTENSLAGER COMPANY

WOOSTER, OHIO Established 1860

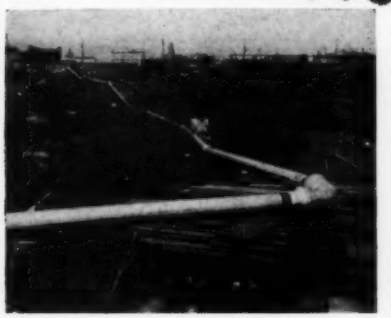
Manufacturers of

Gerstenslager RESCUE CARS

WHEN DISASTER STRIKES...



From pumper to Quick-Coupled Pipe...



...over uneven terrain...

...to high pressure nozzle.

be ready with AMES QUICK-COUPLED "ABC" PIPE

Have your supply of pipe available *in advance*. When disaster strikes...it's too late!

With an Ames emergency supply line you can have plenty of water under high pressure *where* and *when* you need it. Long lines of this lightweight, sturdy aluminum pipe can be set up through rubble-filled streets in a matter of minutes. The "one-man" pipe sections, equipped with "ABC" Couplers, are automatically locked and sealed by water pressure. With ample flexibility at each joint, lines are quickly laid over or around piles of debris, delivering effective volume and pressure wherever it's needed.

Ames portable "ABC" Pipe has been tested* for the State of California Civilian Defense Board. Write for full details of tests and operating data on Ames equipment.

The AMES BALL COUPLER

No bolts, hooks or latches. Instantly coupled and uncoupled from the carrying position. Easily withstands any normal operating pressure. "Ball and socket" construction allows 22° flexibility at each joint.

***REPORT ON TEST OF AMES QUICK-COUPLED "ABC" PIPE**

CONDITIONS: A 980' line of 6" "ABC" Pipe (20' sections) with 3 elbows was set up under conditions simulating streets full of rubble. Water was taken from a city fire hydrant into a fire department pumper, where pressure was increased. At the terminal end of the pipe line, water was taken by hoses into a fire-truck equipped with standard nozzles. Various inlet pressures were employed, and several nozzle sizes were used as the volume increased.

RESULTS:

From Hydrant psi.	Outlet of Pumper psi.	ABC Line Inlet psi.	ABC Line Terminal psi.	Nozzle Tip psi.	Discharge Nozzle Sizes	Gals. Per Min.
69	150	135	105	63	1¾"	778
67	200	180	145	74	2"	1023
63	220	190	120	60	2¼"	1165
55	240	240	240	(Static test)		

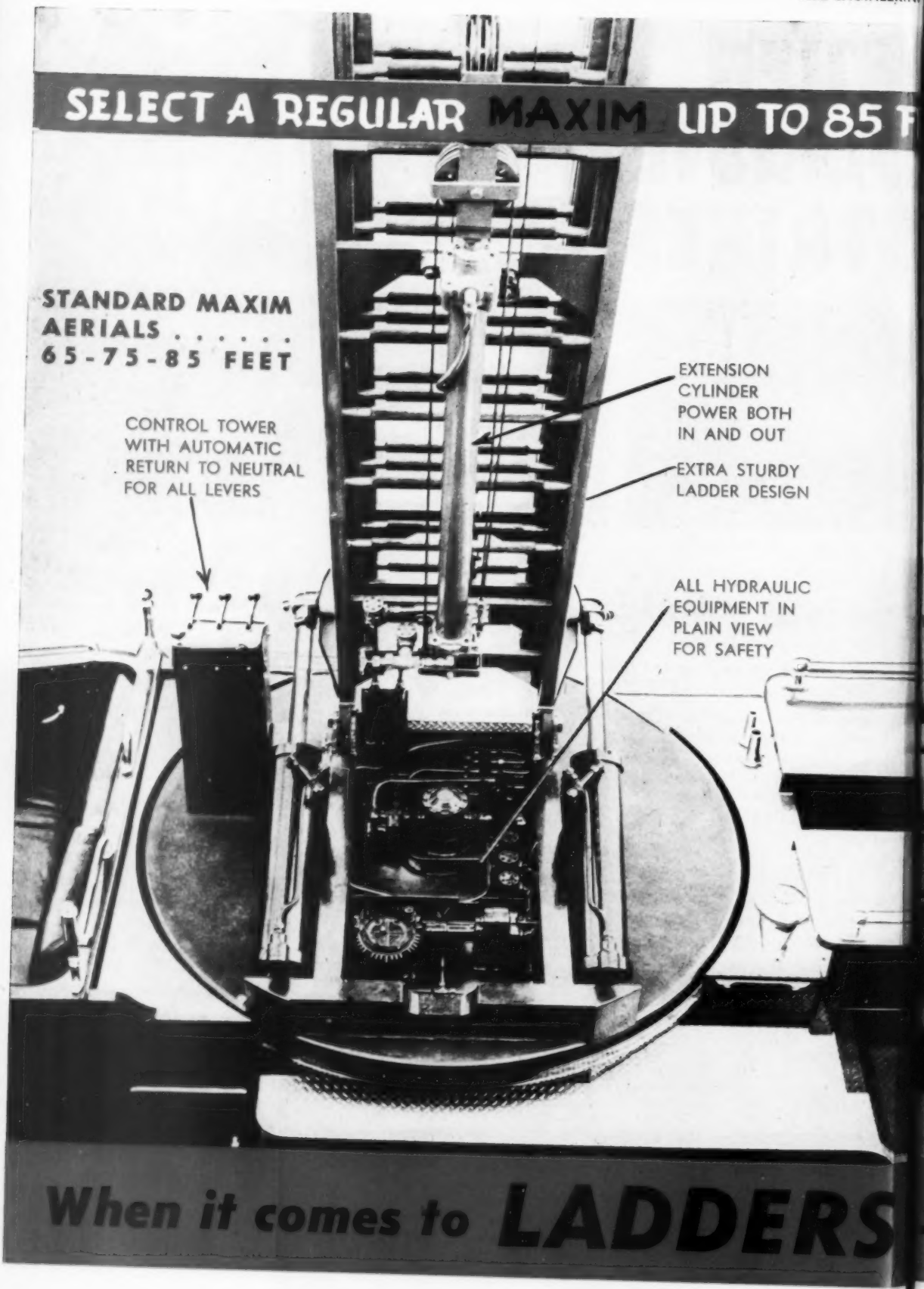
(Pipe weighs 43 lbs. per 20' joint, including couplers)

W.R. AMES CO.

150 HOOPER STREET

SAN FRANCISCO 7, CALIFORNIA

AMES


SELECT A REGULAR MAXIM UP TO 85 F
STANDARD MAXIM AERIALS . . . . . 65-75-85 FEET
CONTROL TOWER WITH AUTOMATIC RETURN TO NEUTRAL FOR ALL LEVERS
EXTENSION CYLINDER POWER BOTH IN AND OUT
EXTRA STURDY LADDER DESIGN
ALL HYDRAULIC EQUIPMENT IN PLAIN VIEW FOR SAFETY
When it comes to LADDERS

5 FOR THE MAXIM-MAGIRUS UP TO 170 FT

Here's your answer to—
getting through today's traffic—
getting in and out of narrow spots—
greater height on only 203" wheelbase.

The MAXIM-MAGIRUS, from 100′ to 170′, is a masterpiece of strong, safe and efficient engineering. Hundreds in use throughout the world.

LITERATURE ON REQUEST.

MAXIM MOTOR COMPANY, MIDDLEBORO, MASS.

S—then come to MAXIM

You can be doubly proud of them—

when they're —

BRAXMAR BADGES

For over 73 years the name BRAXMAR has meant a badge you can be proud of—always the very finest money can buy. Select your badges from the widest possible selection, in nickel, chrome plate, sterling silver, gold plate, rolled gold and solid gold. Write for latest circular.

Circular sent upon request

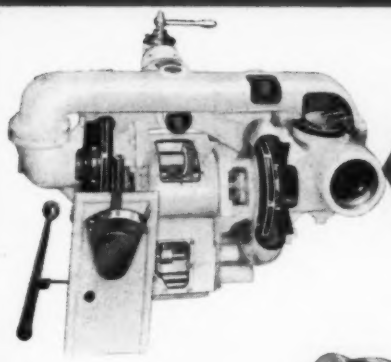
The C. G. BRAXMAR CO., Inc.

JOHN O. VEIT, Pres. JOHN O. VEIT, Jr., Sec. & Treas.

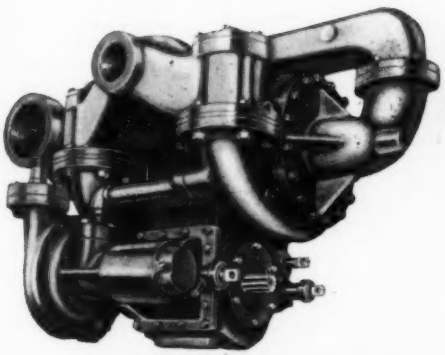
216 EAST 45th ST.

NEW YORK 17

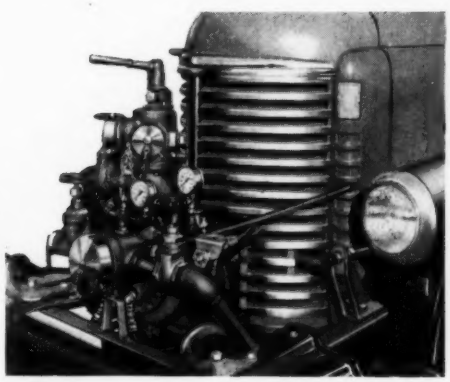
See these 3 Great
AMERICAN-MARSH FIRE PUMPS
at the I.A.F.C. Convention at Boston



DMA MIDSHIP MOUNTED TWO-STAGE



DMB MIDSHIP MOUNTED FOUR-STAGE



READY SOON!

NEW UA PUMP BULLETIN—

Leave your name at booth — new bulletin will be mailed to your address.

UA FRONT-MOUNTED

BATTLE CREEK AMERICAN-MARSH PUMPS MICHIGAN

SEE CUTAWAY DEMONSTRATION MODELS AT BOOTH NO'S. 45 AND 46

SEE the Latest in Fire Fighting

AT T

1 M.S.A. PNEOLATOR

ACCEPTED COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION AMERICAN MEDICAL ASSOCIATION

Because the Pneolator is the nearest automatic approach to natural respiration it assures maximum chance of recovery in all cases of arrested breathing. Providing oxygen for the lungs at the pre-selected amount and pressure, the Pneolator breathes for the asphyxiated patient—aids the patient to full recovery. There is no "suction" cycle. Exhalation takes place by the normal passive return of the respiratory muscles. The Pneolator's intermittent positive pressure is effective in treating patients whose lungs are irritated by corrosive gases. Immediate change over to inhalator when the patient starts breathing.

Light in weight, the Pneolator can be conveyed immediately to the patient . . . conserving the vital minutes that may make the difference between recovery and tragedy. Ask for Bulletin No. CH-2, and a demonstration.

NOTE: The first few minutes after breathing has ceased are the most critical. Immediate application of manual artificial respiration should be started and continued until Pneolator is in use.

4 M. S. A. DEMAND MASK

Supplying compressed oxygen or certified pure air from a back-carried cylinder to facepiece, the M.S.A. Demand Mask provides complete breathing protection for a minimum of 30 minutes in toxic or oxygen-deficient atmospheres. Simple to use, completely dependable. U. S. Bureau of Mines Approved. Bulletin No. B-20.

5 M. S. A. OXYGEN THERAPY UNIT

Compact, easily operated, this instrument provides a dependable and effective means of supplying oxygen to the victim under control of his own breathing demand. Ideal for smoke inhalation, it can be used with any standard oxygen cylinder. Accepted by the Council on Physical Medicine and Rehabilitation of the American Medical Association. Bulletin No. CW-3.

6 M. S. A. ALL-SERVICE MASK

For fire-fighting efforts in air c taminated with smoke and gas, where sufficient oxygen is pres to support life, the "All-Servi Mask assures dependable brea ing protection to the wearer. Av able with the M.S.A. "Clearto Speaking Diaphragm for d speech transmittal. Bulletin N EA-8.

7 M. S. A. EXPLOSIMETER®

A compact, portable, easy-to instrument for checking suspe areas for explosive gases a vapors during fires and in ge survey work. Body carrying st and one hand operation per unhampered use. Easily read d rugged, simple to maintain. B letin No. DN-7.

MINE SAFETY APPLIANCES COMPANY

BRADDOCK, THOMAS AND MEADE STS. • PITTSBURGH 8, PA.

At Your Service: 48 BRANCH OFFICES IN THE UNITED STATES

MINE SAFETY APPLIANCES CO. OF CANADA LIMITED

TORONTO, MONTREAL, CALGARY, WINNIPEG, VANCOUVER, NEW GLASGOW, N.S.

Representatives in Principal Cities in Mexico, Central and South America—Cable Address: "Minsaf" Pittsbur

Safety Equipment - Booth No. 62 and 63

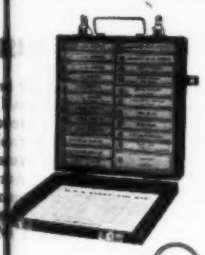
AT THE INTERNATIONAL FIRE CHIEFS CONVENTION

2 M.S.A. CHEMOX®

Firemen equipped with the Chemox can enter and work in unbreathable or oxygen-deficient atmospheres with complete respiratory safety, because Chemox makes its own pure oxygen as the wearer breathes, from a replaceable chemical canister. Non-fogging lenses—no high pressure cylinder lines, or fittings. U. S. Bureau of Mines approved for 45 minutes minimum service per canister. Bulletin No. B-14.

3 M.S.A. STREAMLINED FIREMAN'S HELMET

Made of one-piece high pressure molded laminated bakelite, this popular helmet offers maximum protection against bumps and blows. It is light and comfortable to wear; withstands heat, water and chemicals; provides high dielectric strength against electrical hazards. Soft leather sweatband, adjustable crown hammock, self-ventilating. Bulletin No. DX-9.



8 M. S. A. FIRST AID KIT

Designed to meet all the requirements of fire department service, contents of the M.S.A. Kit are protected against dust, dirt, and moisture. Features a complete supply of emergency treatment for immediate application. Unit packages permit quick location, and economical replacement. Bulletin No. FA-100.

9 M. S. A. FOILLE SPRAY KIT

This kit is supplied with an efficient spray gun for quick application to burned areas, promptly easing pain and aiding in the control of shock. An ample supply of Foille in jars which connect to the spray gun and a complete assortment of first aid dressings and accessories are assembled in a weather-proof steel case. Bulletin No. FA-1-A.

10 M. S. A. FLOOD LAMP

Safe in gaseous atmospheres, this lamp combines brilliant, unfailing illumination with easy portability. Equipped with standard Edison Batteries in magnetically-locked steel container. Lamp housing is water and dust proof. Bulletin No. M-10.

Call the M. S. A. Man
on your every safety problem
... his job is to help you.

MSA
SAFETY EQUIPMENT HEADQUARTERS

You bet I specify MIDWESTERN Protective Clothing ... my men deserve the BEST!

PROTECTION • COMFORT • SERVICE

Superior quality, design, fabric texture and many exclusive features have made Midwestern Protective Clothing the leader wherever men fight fires. Mackinaw Coats and other famous Midwestern garments help safeguard the fireman's life on every run . . . enable him to efficiently use his equipment to the fullest advantage.

There is no substitute for the extra protection, built-in comfort and longer wear you get by specifying Midwestern clothing. In our vast selection of rubber materials you will find the type of fabric exactly suited to your climate and needs. You can count on the softness and flexibility of the high grade materials used to meet your most exacting requirements for lasting comfort and rugged service.

Due to government requirements for Midwestern Protective Clothing, prompt delivery will be assisted if you place your order early. For complete information, have your Midwestern dealer show you our full line. A letter to the factory will also bring you literature and material samples for your inspection.

MIDWESTERN MFG. CO., Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Coats**

They fight fires better!

International fire truck chassis are something "special," and here's why:

... they're specially engineered for fire department use—they're *not* standard hauling units.

... they're specialized to meet all fire department requirements as to flexibility, dependability, speed of operation, ruggedness, operating economy, and safety.

... they're engineered for longer life and lower maintenance expense.

... they're engineered for ease of handling and maneuverability.

... they're built to come out fighting at the bell—year after year.

... they're engineered to meet the specific requirements of your department and your community.

... and they have the traditional toughness that has kept International the heavy-duty truck leader for 20 straight years.

There's a lot more you should know about International fire truck chassis: Get the facts from your International truck dealer or branch.

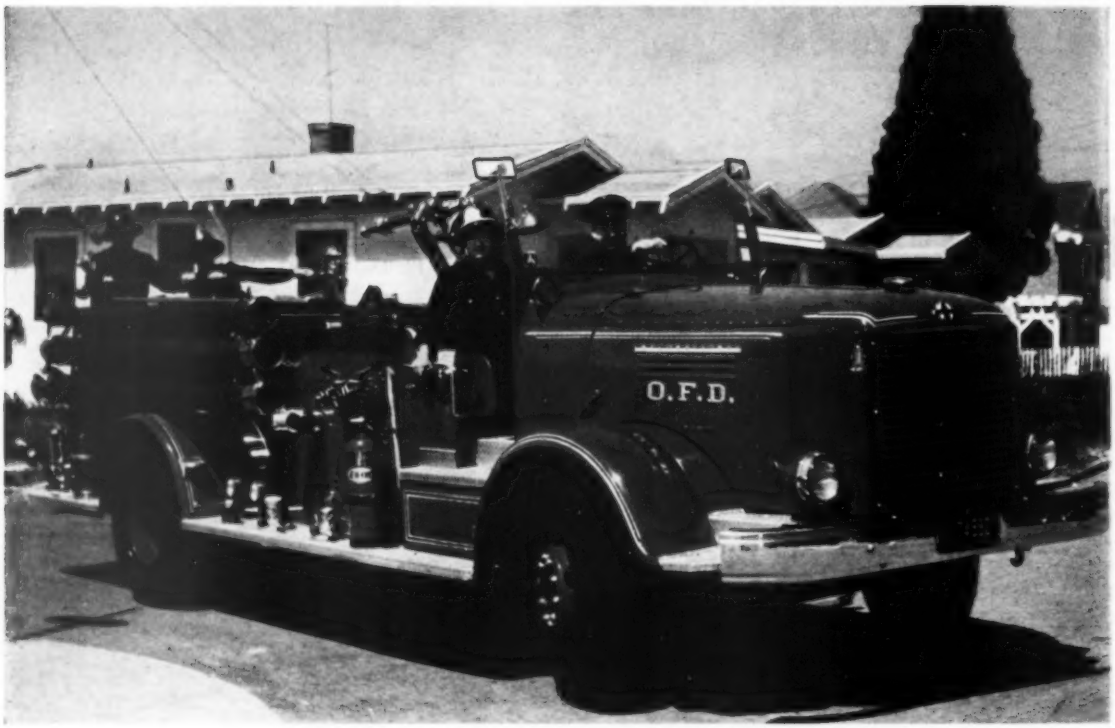
Illustrated Below: International L-306, GVW 30,000 pounds, 167-inch wheelbase, 245 h.p. engine, 5-speed transmission, setback front axle for short turning radius. 4-inch wide chrome-vanadium steel springs with threaded pins and bushing. Extra-rugged steel-flex frame with heat-treated chrome-manganese side rails. Carries complete fire fighting equipment—1,000 GPM main pump, 100 GPM auxiliary pump, 500-gallon water tank, ladders and hose.

INTERNATIONAL HARVESTER COMPANY

International Builds McCormick Farm Equipment and Farmall Tractors . . . Motor Trucks . . . Industrial Power . . . Refrigerators and Freezers

INTERNATIONAL INTERNATIONAL **TRUCKS**

"Standard of the Highway"



Illustrated Above: International L-306, GVW 30,000 pounds, 169-inch wheelbase, flat-back cowl, 275 h.p. engine, dual ignition. Transmission has four speeds forward, one reverse. Setback front axle for short turning radius. Oversize hydraulic brakes with vacuum booster, chrome-manganese steel heat-treated frame. Carries complete fire-fighting equipment—1,250 GPM pump, 500-gallon water tank, ladders and hose.

International Builds Rugged Heavy-Duty Fire Truck Chassis for Fire Fighting Equipment of All Types and Sizes

Fire Apparatus Manufacturers Using International Chassis

American Fire Apparatus Company
John Bean Division of Food Machinery and Chemical Corporation.
Boyer Fire Apparatus Company
Central Fire Truck Corporation
Coast Manufacturers
Crenshaw Equipment Company
W. S. Darley Company
Fire Fighter Truck Company
Forstner Brothers
General Truck Division of General Detroit Corporation
Howe Fire Apparatus Company
Luverne Fire Apparatus Company
Maxim Motor Company
Minnesota Fire Equipment Company
Wood Engineering Service, Inc.
Yankee Motor Bodies Corporation
Young Fire Equipment Corporation

When the alarm rings, a fire truck must be ready to roar out and get to the fire in a hurry. And then have the pumping power to stay on the job no matter how long it takes.

That calls for a fire truck chassis of exceptional ruggedness, dependability and speed plus extra safety for the engineer and firemen.

Obviously, such a chassis must be specialized for its job. And that's exactly what International does—engineers chassis for all types of fire fighting equipment, for towns and cities of all sizes.

There are smaller International specialized fire truck chassis with pumping capacities ranging from 500 to 750 GPM. These models include the L-166; L-176, L-1856, L-196, and L-206.

So, if you're considering a new fire truck, you'll be wise to get complete information about an International fire truck chassis, specialized for your requirements.

What every fireman should know about high pressure fog fire equipment

Using small lines, faster attack and more efficient application of water, fire fighters have found that in many cases high pressure equipment offers certain advantages over low pressure equipment. For example, it has been found that high pressure fog can be used on more fires than low pressure fog since it reaches 60 to 70 feet. And because high pressure fog is usable on all types of fires, it provides an all-around fighting tool.

For Blasting, Smothering, Cooling

High pressure fog is effective in extinguishing fires by blasting, smothering, and cooling. In many cases it combines all three methods of fire extinguishing. By blasting fog particles against a flame, the fire can often be swept off the fuel. Using the smothering technique, high pressure fog particles literally hang in the air in an enclosed space, and the fire cannot get enough oxygen. For cooling, the small fog particles absorb heat faster because more water surface is exposed to heat. These advantages also mean that less water is needed to extinguish a fire.

Attack Is Faster

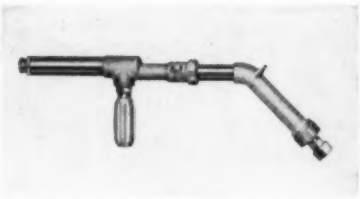
Hose lines are ready to use at all times and no time is lost laying them to the fire. The pump will provide full pressure at the nozzle with the operation of only one valve. In fact, it is possible to have the pump operating before the truck has come to a stop.

Less Manpower

Hose lines are ¾" inside diameter and light and flexible. Thus they can be handled easily and efficiently by a minimum number of firemen. No special skill is required to use high pressure fog equipment, although of course, fog can be applied more efficiently by trained firemen.

Protects Personnel

The high pressure fog stream drives heat ahead of the fireman as he advances on a fire. At the same time it absorbs the radiated heat. This makes it possible to fight many fires at close quarters where most good can be done. In addition, a fine fog stream can be directed against electrical equipment without danger to firemen.



MYERS SILVER FOG FIRE GUN. Newest design. No recoil, single control, chrome finish. 3½ to 27 GPM. From 400 to 800 lbs. pressure.

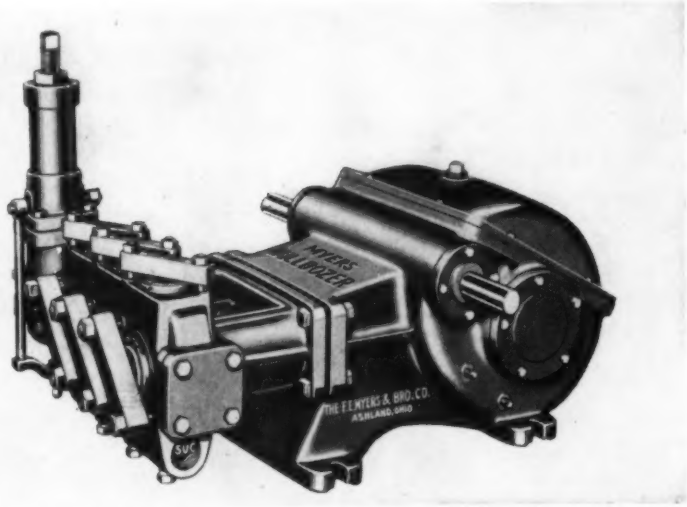
MYERS LONG DISTANCE GUN. Carries a straight stream greatest possible distance before it breaks up. Length 49 inches. Range of 19.6 to 43.5 GPM. Pressures of 400 to 800 lbs.

Less Water Damage

Since the small water particles of high pressure fog absorb heat very rapidly, most of the water applied turns to steam. There is far less run off to cause damage and thus property loss is reduced.

High pressure fog permits the most efficient use of small lines in attacking and controlling fire. It greatly increases the percentage of fires which can be handled by booster lines and tanks. Each time a fire of this class is extinguished promptly a major fire is prevented.

For complete information on Myers high pressure fog equipment write for catalog M-624.



MYERS BULLDOZER FIRE PUMPS. Because Myers high pressure pumps are compact and easy to mount, they can be located in any of various places on the truck chassis. Capacities of 60, 40, 20 and 15 gallons per minute. 800 lbs. pressure. Self-oiling.

THE F. E. MYERS & BRO. CO.
244 Orange St., Ashland, Ohio

Ready to Warn Americans at a Moment's Notice!

Paul Revere's famous ride April 18th, 1775, warned Americans of impending attack.

CHRYSLER AIR RAID SIREN

- **Sounds Loudest Warning ever produced**
- **Has independent power**
- **Can be remote-controlled**
- **Cost less for complete coverage**

Today, Chrysler Air Raid Sirens are standing ready to warn American cities and towns in case of attack.

These sirens produce the loudest warning sound ever achieved by modern production. They are independently powered by the revolutionary new 180 horsepower Chrysler V-8 Industrial Engine. This great engine is the only power needed to motivate the Siren. When operating at full speed the Chrysler Siren has a range of four miles.

Chrysler Air Raid Sirens can be remote-controlled from a hidden central control station, or may be manually operated at the location site. Chrysler Sirens offer greatest coverage with the least number of sirens. More sound carries over a wider area.

For complete information, specifications and availability of this most modern warning device, write Siren Layout Service, ***Marine and Industrial Engine Division, Chrysler Corp., Trenton, Michigan.***

Civil Defense is a common need, shared by all. Help yourself to preparedness. Join the Civil Defense group in your area.

CHRYSLER
AIR RAID SIREN

AHRENS-FOX

...for those who insist on the finest

Mind if we put in an *extra* Quarter?

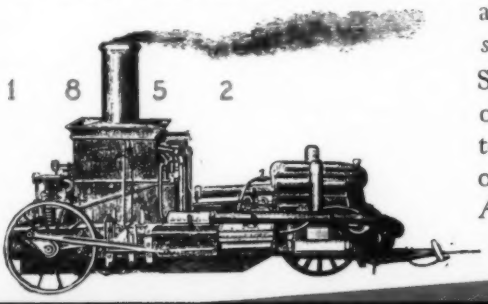
Three quarters of a Century devoted to serving the fire fighting profession is certainly worthy of celebration.

So the makers of Ahrens-Fox Fire Engines congratulate Fire Engineering on its 75th Anniversary—and extend best wishes to the Fire Chiefs attending the Annual International Convention.

At the same time we take pride in pointing out that Ahrens-Fox has been a leader in the field for the past three quarters of a Century—***plus an extra quarter!***

Yes—Ahrens-Fox has been setting the standard for fire fighting apparatus since 1852. And constant research coupled with exceptional engineering skill has enabled Ahrens-Fox to present "the finest" from the very beginning.

Of course—even the high standards of today will again be exceeded—but with pardonable pride—we suggest that Ahrens-Fox will *still* be "the finest."



So—we congratulate *every* Chief on his years of service—and offer added congratulations to those who have had the proud pleasure of working throughout their careers with Ahrens-Fox equipment.

AHRENS • FOX FIRE ENGINES

CINCINNATI 14, OHIO

SAVED BY THE FIRE DEPARTMENT

Practically always, when you read news reports on bad storms or other disasters, you see this line: —

"emergency lighting plants were rushed into operation by the fire department"

That, of course, is part of your service to your community . . . a service that saves lives, particularly in hospitals or institutions and other spots where electric power is a must. And you perform that service best with Homelite Carryable Generators. They're light . . . easy to put into operation quickly, anywhere. And they're dependable . . . at all times . . . in all kinds of weather.

No fire department should be without one or more Homelite Carryable Generators . . . ready to save lives in emergencies, disasters or night fires. Write today for complete information on Homelite Carryable Generators.

Manufacturers of Homelite Carryable Pumps • Generators Blowers • Chain Saws

PERFORMANCE · DEPENDABILITY · SERVICE

HOMELITE

CORPORATION

308 RIVERDALE AVENUE • PORT CHESTER, N. Y.

Headquarters for Fire Department

BRASS GOODS

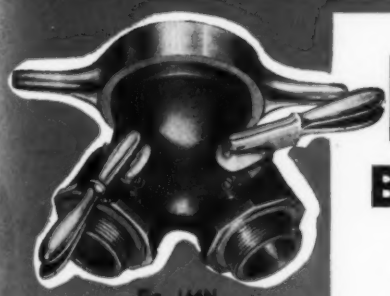


Fig. 164N
4½" swivel female x two 2½" male Gated Siamese. Quick opening, ¼ turn valves.

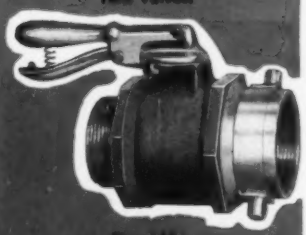


Fig. 165
Made either Right Hand or Left Hand 2½" male x female, gate valve.

McINTIRE BRASS WORKS

Pioneers in Nozzle Manufacture

ORIGINATORS *and Sole Mfgrs. of*

INVINCIBLE NOZZLES

We invite figuring or bidding on all types of brass work

Fig. 156
"MORSE" SHUT-OFF NOZZLE AND PLAYPIPE COMBINATION

FIREBOAT TOWER NOZZLE

Operated by Remote Control

with full Transverse Control

Figure 114-B
—one of many—
made by pioneers in nozzle manufacture.

AUTOMATIC-OPERATING SHUTTER AND SLIDING POLE

For the FINEST BRASS GOODS *Specify* McINTIRE

15 foot high.
4500 G.P.M.
5" tip.

F. N. McINTIRE BRASS WORKS 377 Putnam Avenue Cambridge 39, Mass.

MODERN EMERGENCY APPARATUS

STANDARD MODEL
requires a 154 HP chassis of 175" WB and 22,000 GVW.

SENIOR MODEL
requires a 160-200 HP chassis of 200" WB and 28,000 GVW.

Photos are of Senior Model, including Floodlight feature recently delivered to the City of Syracuse, N.Y.

This emergency and disaster truck is the most completely equipped unit ever built and is custom-made in every detail.

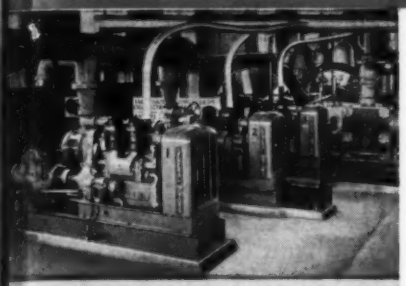
For over 20 years we have built emergency apparatus to meet individual department requirements. You owe it to yourself to have the best.

A selection of any or all major features such as 10 KW floodlighting, seat carrying stretchers, hospital equipment and interior compartments for first aid, may be selected to cover the purchaser's requirements. The exterior compartments carry large equipment such as smoke ejectors, acetylene cutting torch, portable pump, jacks, resuscitators and masks.

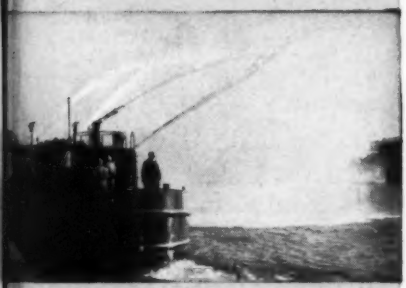
Write and give us a list of your requirements to enable us to send you photographs and specifications of the model that suits your particular case.

AFE **APPROVED FIRE EQUIPMENT CO.**
ROCKVILLE CENTRE • NEW YORK

READY TO SERVE IN CIVIL DEFENSE



Water Department of Pontiac, Michigan, has for standby service three 6-cylinder GM Diesel engines connected to pumps with a total capacity of 378,000 gallons per hour.



Chicago, Philadelphia, Houston and other cities depend on GM Diesel-powered fireboats for waterfront and harbor protection. These boats, with 6-, to 12-thousand GPM capacity, are equipped to pump into city mains in emergency.

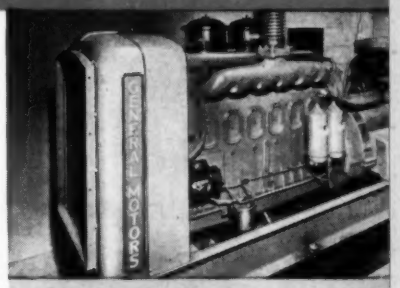
Important "nerve center" serves fire alarm boxes in the Borough of ..., New York City. Two 60 KW DC Diesel generators provide standby ...

To ASSURE standby power for water supply, lighting and communication in emergencies, many of America's cities, public utilities, defense industries, hospitals, airports and radio stations rely on General Motors 2-cycle Diesel power. Pictured here are a few of the ways these high-powered portable Diesels help safeguard vital public services.

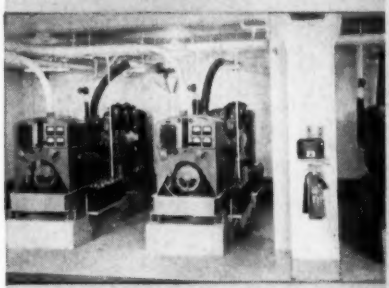
★ ★ ★ ★ ★

General Motors Diesel engines are built in a wide range of models to meet all types of power needs—Series 71 engines, 2 to 24 cylinders, 32 to 800 H.P. and 6-cylinder 110 engine, 275 H.P. For specific information on how these compact, portable Diesels can fit into your Civil Defense plans, *write, wire or phone.*

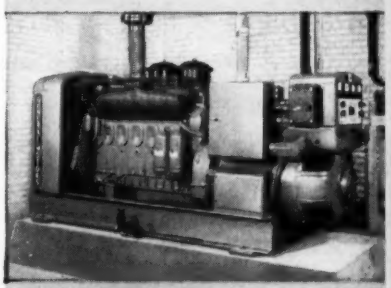
Diesel Brawn without the Bulk



Radio Station WMPS, Memphis, Tennessee, installed this 60 KW GM Series 71 Diesel generating set for emergency standby use. This auxiliary picks up full broadcast load within 3 seconds if power supply drops below a critical point.



Telegraph Office has GM Diesel standby electric generators for emergency service. Similar sets of from 20 to 200 KW can take up normal voltage load of hospitals, defense plants, public buildings and small communities.



Over 800 U. S. Telephone Exchanges are equipped with GM Diesel Electric generator sets, providing a reliable source of emergency power to insure communications.

DETROIT DIESEL ENGINE DIVISION

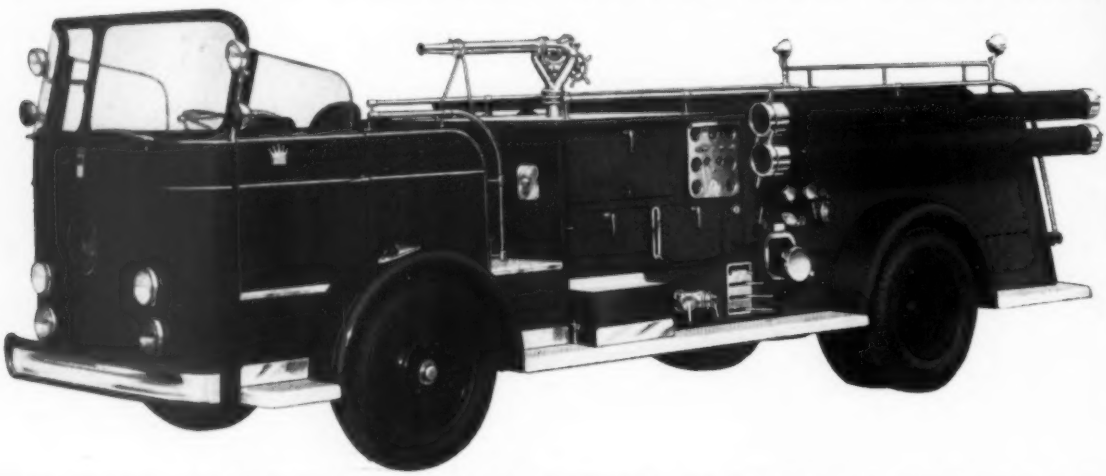
SINGLE ENGINES... *Up to 275 H.P.* **DETROIT 28, MICHIGAN** MULTIPLE UNITS... *Up to 800 H.P.*

GENERAL MOTORS

GM
GENERAL MOTORS
DIESEL POWER

Crown PRESENTS A *REVOLUTIONARY* NEW FIRE ENGINE

COMPARE IT WITH WHAT YOU ARE NOW OPERATING



CROWN'S NEW 1250 GALLON PER MINUTE HEAVY DUTY PUMPER • MODEL CP 125-93

The new Crown pumper illustrated above is the outgrowth of years of planning and research. The complete unit was designed, engineered and built by Crown for functional efficiency, and thoroughly tested and proven.

This pumper is one of a complete line of Crown fire trucks—many other capacities and designs available to customer's specifications.

CAB-AHEAD-OF-ENGINE: WITH MINIMUM AXLE OVERHANG—5-MAN SEATING
SHORT WHEELBASE: ONLY 156"—PERMITS SHORT TURNING
SHORT TURNING: TURNS WITHIN A 55' CIRCLE FOR MAXIMUM MANEUVERABILITY
SHORT OVER-ALL LENGTH: ONLY 23' 6"—YET IT'S "ALL THERE"!
WIDTH: 96" OVER ALL, INCLUDING FENDERS AND RUNNING BOARDS
PUMP TRANSMISSION: 1-LEVER 2-POSITION CONTROL—PERMITS PUMPING WITHOUT USE OF MAIN ROAD TRANSMISSION
PUMP CONTROLS: ALL ACCESSIBLE ON LEFT SIDE OF VEHICLE
BOOSTER TANK: STANDARD 200 GALS.—LARGER IF REQUIRED
HOSE BODY: STANDARD 1500'—2½" D. J. R. L. DISCHARGE HOSE
COMPARTMENTS: 6 LARGE COMPARTMENTS FOR RADIO, EQUIPMENT, ETC.
SIREN: BUILT INTO DEFLECTOR—SOUND PROJECTED TO FRONT OF VEHICLE
ENGINE: AVAILABLE FROM 160 TO 300 HORSEPOWER
AXLES: TIMKEN HEAVY DUTY—WIDE TRACK
STEERING: CAM AND TWIN ROLLER BEARING LEVER (POWER STEERING OPTIONAL AT EXTRA COST)
BRAKES: WESTINGHOUSE AIR, DUAL PRIMARY ACTION, QUICK AIR BUILD-UP
BATTERIES: DUAL SYSTEM—12 VOLT
WINDSHIELD: FULL VISION, SHATTER-PROOF BENT PLATE GLASS
FIRE EQUIPMENT: LADDERS, AXES, CROWBARS, PIKES, EXTINGUISHERS, ETC.
HOSE REELS: 2 REELS 200' EACH OF ¾" HIGH-PRESSURE HOSE

Crown BODY AND COACH CORPORATION

FIFTY YEARS OF SERVICE IN THE MANUFACTURE OF FIRE APPARATUS • MOTOR COACHES • SCHOOL BUSES

2500 EAST 12th STREET, LOS ANGELES 21, CALIFORNIA • TELEPHONE: TRINITY 4021

ALWAYS SPECIFY BY NAME "SENSIBLE LUG"

THE *SENSIBLE LUG* COUPLING MEETS GOVERNMENT SPECIFICATIONS AND MEETS APPROVAL IN FIRE SERVICE EVERYWHERE

.... the improved SENSIBLE LUG coupling is the finest coupling money can buy. Always be sure to specify it by name . . . *"SENSIBLE LUG"* Rocker Lug Type coupling, to be sure!

our 60th year

Everything IN BRASS GOODS

ADAPTORS	NOZZLES
REDUCERS	PLAYPIPES
SIAMESE	HOSE PLUGS
GATE VALVES	HOSE NIPPLES
SPANNERS	HOSE CAPS
TIE EXPANDERS	STRAINERS
HOSE COUPLINGS	SUCTION COUPLINGS
HYDRANT VALVES	PLAIN HOSE PIPES
EXPANSION RINGS	ANGLE HOSE VALVES

Sachem Leader Line Shut-Off Nozzle

New York Fire De Style Shut-Off Nozz With Plain Tip

POWHATAN BRASS and IRON WORKS

RANSON, WEST VIRGINIA

Phones 93 & 94 Charles Town, West Virginia

Established 1892

Ladders of Success

ALCO-LITE Type SL

The Single Wall Ladder is a strong, useful ladder of extremely light weight. It is suitable for general fire-fighting and is especially handy for bridging floors. A desirable adjunct to every fire company's scaling equipment.

ALCO-LITE Type RL

The Roof Ladder is light and easy to handle . . . can be used for bridging floors and roofs as well as for scaling. All aluminum except for folding hooks made from the finest forged steel.

ALCO-LITE Type 3 EL

This Heavy Duty Extension Ladder is the most popular fire ladder in use today. Built to take the heaviest kind of use. So light four men and a supervisor can raise a 65-foot ladder (the largest of this type) in a ten-foot alley.

Proved by 22 Years of Service

Aluminum Ladder Company — *original* manufacturer of aluminum fire service ladders — produces the most popular ladder equipment now in use. Since 1930, it has met the exacting requirements of fire fighters throughout the nation by superior service under the most rugged conditions. Exclusive features such as riveted double-plate bracing, permanently anchored corrugated rungs, and T-channel design of long members have made this record possible.

CATALOG ON REQUEST

ALUMINUM LADDER COMPANY

200 CARBIS ST., WORTHINGTON, PA.

The Original Manufacturer of Aluminum Fire Ladders

Single Wall Ladders • Light-Duty Extension Ladders • Heavy-Duty 2, 3 and 4-Section Extension Ladders • Roof Ladders • Folding Ladders • Pike Poles

more FIRSTS . . . with more FEATURES

From this "new angle"— or any way you look at it— an American Fire Engine gives you MORE fine features!

YOU MEET NEW fire-fighting problems all the while. That's why *we* work constantly to give you practical new features that increase your engine's ability to cope with any situation.

In this view, for example, you can see the Rear Filler with Spring Loaded Valve which doubles as Relief Valve to protect Booster Tank. Note also the natural-finished oak Hose Bed Floor . . . Hose Bed Partitions . . . Rear Compartments . . . Dual Reels with Electric Rewinds and Pressed Metal Wheels . . . Tank Float Water Level Gauge . . . Fender Step Plates . . . Streamlined Body joined rigidly to Cab, with Streamlined Rear Fenders and Chrome Plated Railing along Body.

And that's but a sample of the dozens of advanced, well-engineered features that make American Fire Engines outstanding in the field.

When you order an American Engine, you can choose the truck chassis you want . . . get special body construction . . . special compartments . . . Barton-American midship or front-mounted pumps . . . and the unequalled Barton Super-Fog Gun! We take full responsibility for the entire unit.

Why not contact our nearest representative for details on ALL American features?

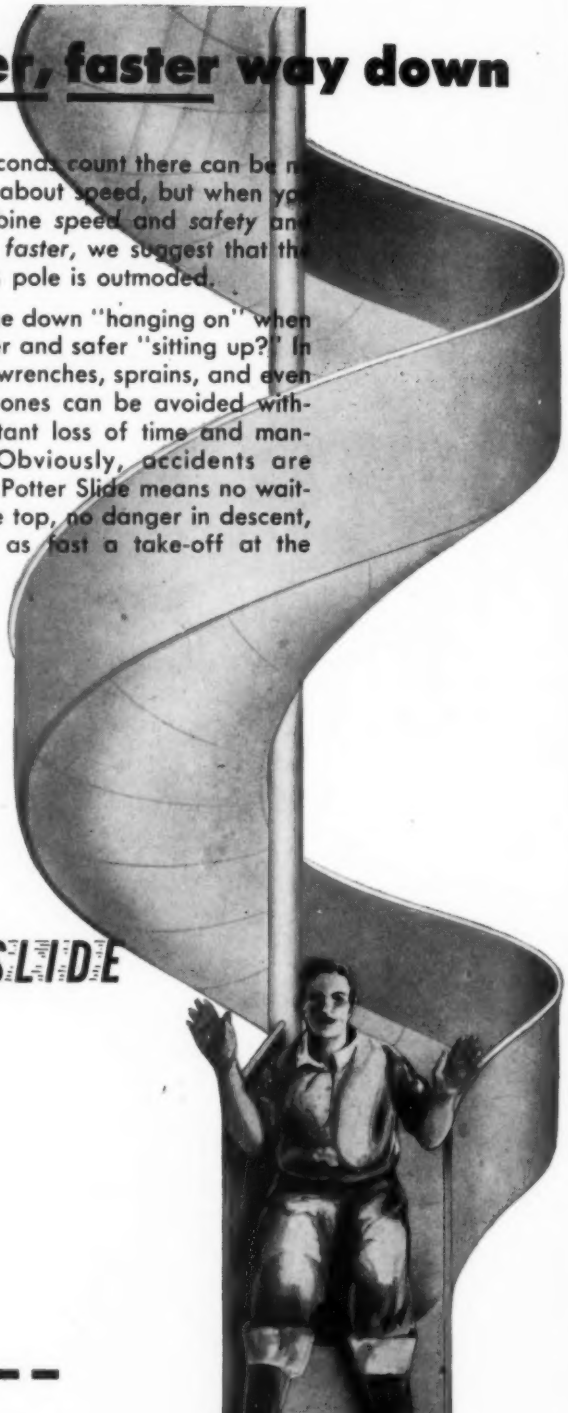
American
FIRE APPARATUS CO.
P. O. BOX 1024, MAIN ST. ROAD, BATTLE CREEK, MICH.

"Always Pioneering with Better Engineering!"

take an easier, safer, faster way down

When seconds count there can be no question about speed, but when you can combine *speed* and *safety* and still slide *faster*, we suggest that the old brass pole is outmoded.

Why come down "hanging on" when it is easier and safer "sitting up?" In this way wrenches, sprains, and even broken bones can be avoided without resultant loss of time and manpower. Obviously, accidents are costly. A Potter Slide means no waiting at the top, no danger in descent, and just as fast a take-off at the bottom.



install this POTTER SLIDE

This simple, easy, safe chute eliminates all hazards, requires only 36 square feet of floor area, can be installed anywhere in the station and nobody can get hurt coming down even if they are half asleep. We are now installing three of these modern, quick descent slides at Mishawaka, Indiana. . . . Send this coupon today for full information.

POTTER FIRE ESCAPE COMPANY
6114 N. California Ave.
Chicago 45, Illinois

Gentlemen:

Without obligation we will be glad to know more about the Potter Fire Slide for fire houses.

Name_____

Address_____

City_____ State_____

IT'S TOPS

. . . the noticeably better performance of American Fire Hose is the natural result of skillful, painstaking manufacture. American does not compromise with quality—as a result critical buyers eventually standardize on American.

LAMINATED CONSTRUCTION 5 . . . calendered sheets

CRACKERJACK

MUNICIPAL FIRE HOSE

OTHER AMERICAN BRANDS

WHITE	*TREATED
Crackerjack	Crackerjack-Arcolized
American	American-Arcolized
Municipal	Municipal-Arcolized
Tiger	Tiger-Arcolized
Underwriters	Underwriters-Arcolized

Fully guaranteed against mildew and rot; water repellent.

FLEXIBLE . . . balanced weave and premium yarn assure greatest strength and flexibility.

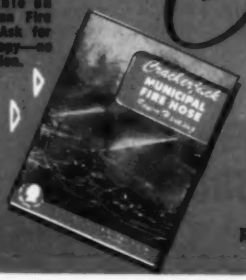
SMOOTH WATERWAY . . . lowest possible friction loss.

DEPENDABLE . . . unsurpassed for ruggedness and long life.

LOWEST COST PER FOOT PER YEAR

ASK FOR BULLETIN

Descriptive literature is available on American Fire Hose. Ask for your copy—no obligation.



THE *American* RUBBER MANUFACTURING CO.

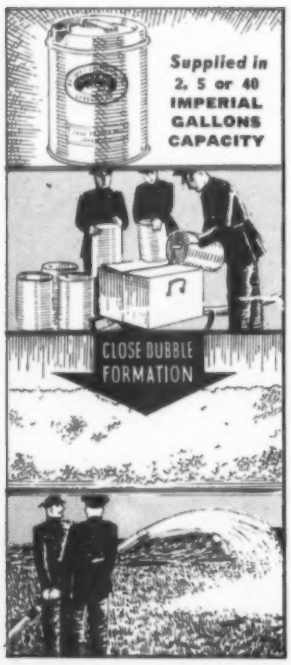
FACTORY & General Offices | 1145 Park Avenue, Oakland 8, California, Phone: OLympic 2-0800

Branch Offices: SEATTLE, Smith Tower, Phone SEneca 1727
PORTLAND, Dekum Building, Phone CApitol 1708
SAN FRANCISCO, 7 Front St., Phone SUtter 1-6068
LOS ANGELES, 711 E. Gage Ave., Phone ADams 1-9279

THE AMERICAN RUBBER MFG CO. OAKLAND CALIF.

Write for name and address of your nearest American Distributor

Kills Oil & Petrol Fires with SPEED & CERTAINTY



★ Nicerol is supplied in heavy gauge steel drums designed for quick release and clean pouring.

★ Nicerol can be used in any type of mechanical foam or air foam apparatus. In this case a base injection type in-line inductor is being operated.

★ The secret of Nicerol effectiveness lies in the small bubble formation. It creates a tough, efficient blanket. 3 gallons of Nicerol and 100 gallons of water will produce over 1,100 Imperial gallons of foam.

★ The above gasoline and oil blaze was extinguished in a matter of seconds by a normal mix of Nicerol Foam Compound.

Meet the hazard of fire with Nicerol, the foam compound that kills any oil or gasoline fire quickly and absolutely. Nicerol is a concentrate, producing a heavy type foam of closely-knit small bubbles which form a tough, vapour-tight blanket over the surface of burning oil or gasoline. It is characteristic of Nicerol Foam that it flows with the fire and is highly resistant to flash-back or re-ignition. It can be used successfully in any type of mechanical foam or air-foam apparatus — is equally effective with salt water or fresh and can be stored for years without deterioration.

The Royal Navy and the Royal Air Force use it and so do Oil Companies, Fire Equipment Manufacturers, Civil Air Lines, several Commonwealth and Foreign Government departments, and Fire Brigades throughout the world. What better recommendation?

TRADE ENQUIRIES INVITED

For further particulars, samples, catalogues, etc.:—

NICEROL LIMITED, LISBURN, N. IRELAND

Telephone: Lisburn 2027 ***Telegrams: Nicerol, Lisburn.***

750-1000 G. P. M.

CUSTOM-BUILT TRIPLE COMBINATION FIRE APPARATUS

OREN

ALL NEW

MODERN DESIGN—RUGGED DEPENDABILITY combining carefully selected components, balanced design, thorough engineering, the finest materials, and workmanship.

OREN MODEL 1575/750 PUMPER
(See this Pumper and the Model 1600/1000 Oren Pumper for **JAMESTOWN, NEW YORK,** at the I.A.F.C. Convention in Boston, August 25-29, 1952.

BE SURE TO VISIT OREN EXHIBIT AT THE I.A.F.C. BOSTON CONVENTION, AND SEE THE NEW OREN PUMPERS ON DISPLAY THERE.

MULTI-SERVICE CENTRIFUGAL PUMPS

●

HIGH-OUTPUT OVERHEAD VALVE ENGINES

Write for Details

OREN ROANOKE CORP.

ROANOKE 16, VIRGINIA

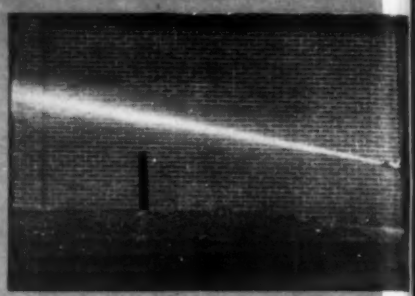
The QUAD-WAY Fog Nozzle is a combination of years of research, careful precision engineering and practical experience.

QUAD-WAY® FOG NOZZLES

FIRE FIGHTERS' CHOICE FROM COAST TO COAST

The speed with which the fireman can change his attachment to meet quickly changing conditions often makes the difference during a fire. Quad-Way's quick versatility, its ability to fight fire four ways, gives the fireman a choice of streams ranging from a dense vapor-fog to a solid straight stream and a combination of both. Built by America's outstanding producer of fire-fighting equipment, the QUAD-WAY gives the firefighter every stream needed — right at his fingertips.

TRUMPET QUAD-WAY FOG GUN
Made for your standard booster lines in both low and high pressure work. Provides same selectivity — a solid straight stream, dense fog mist, or a combination of both to any varying degree.



FULL SOLID STRAIGHT STREAM
The construction of the QUAD-WAY produces a more efficient stream because of the added length of the solid stream orifice and the scientifically broached interior.

VAPOR OR FOG-MIST ONLY
This nozzle has a range of 20 to 160 angle inclusive. The fog-mist pattern is dense, not hollow, throughout its entire range.

SOLID STRAIGHT STREAM AND WATER CURTAIN COMBINATION
This safety feature enables the man to protect himself from excessive heat, smoke and poisonous fumes, and continue to fight the fire.

COMPLETE SHUT-OFF
The solid stream and fog-mist operate by separate conventional shut-offs. The valves are so carefully engineered that they can work instantly yet provide a leak-proof seal.

WOOSTER BRASS

DIVISION OF THE FYR-FYTER COMPANY

WOOSTER® OHIO

We Salute:

The Progressive Fire Chiefs and Their Departments

AN outstanding example is the Fire Department of Boston, host city to the Convention of the International Association of Fire Chiefs.

These progressive fire fighters added to their equipment a fleet of engines of the type you see above*. Beside the latest of water equipment, they carry 750 lbs. of CARDOX Low Pressure Carbon Dioxide. By adding the fast, non-destructive action of carbon dioxide, these trucks provide faster, surer extinguishment of gasoline, oil, electrical and many other kinds of fires difficult or impossible to handle by conventional apparatus.

Ask The Men Who Use Them!

While at the International Association Convention, be sure to inspect these trucks. Ask the men assigned to them about their performance and the results they have achieved. You'll be able to judge intelligently the place of similar equipment in your department.

CARDOX manufactures a full line of carbon dioxide, carbon dioxide-and-water and carbon dioxide-and-foam trucks as well as Airport Fire Trucks. Write for complete descriptive folios.

*Built by Mack Manufacturing Corporation. Low pressure carbon dioxide equipment by CARDOX. Similar equipment can be specified for use with any make of apparatus.

CARDOX CORPORATION • BELL BUILDING • CHICAGO 1, ILLINOIS

BE SURE TO SEE THE

TRADE PERFEX MARK

"Ranger"

. . . AT THE I.A.F.C. CONVENTION. BOOTH #49

One of these "Ranger" Chemically Flame Proofed Fire Fighting Brooms at hand in a critical moment can save tremendous fire loss. It combines PERFEX'S 25 years of construction know-how with the best quality materials, adding up to the best you can buy . . . *anywhere!*

It's the best Fire Fighting Broom on the market. The many features, including a metal collar where the handle joins the heavy gauge metal cap to prevent this vulnerable point from charring or breaking, make this a dependable and long lasting tool. Other important features are listed in the edge of the page. The carefully prepared blend of whole and split rattans make this broom acceptable for all types of fire fighting, whether grass or underbrush. The fibres are colored fire department red for easy identification.

- Chemically fire proofed solid Rattan fibres. Colored Fire Department red.
- Riveted into heavy gauge rust proof metal head.
- Strong Hickory handles. Metal re-inforced at all points of stress.
- If your dealer cannot supply you, write, giving your dealer's name and address to:

PERFEX

41 DINSMORE PLACE, BROOKLYN 5, N. Y.

and Last

First Name in Hose Reels

HANNAY

HANNAY has a hose reel for every purpose, for every business or industry employing hose.

In the petroleum and chemical industries, in aviation, and among the nation's leading manufacturers of fire fighting equipment, the name HANNAY is synonymous with "best".

Stationary and mobile types, hand or motor operated. Also special reels for special jobs such as cable reels for portable X-ray and lighting installations.

When good hose reels are needed, standard or special purpose, put your problems up to Hannay.

New EXPLOSION-PROOF Model

Developed to overcome dangers previously associated with electrical rewinds. Sealed, Underwriters-approved motor protected against fog, foam, water and fumes. Safe, controlled rewind speed. Acclaimed by users, "the safest, most efficient Hose Reel ever built!"

Look for this...

HANNAY
REG. U. S. PAT. OFF.
HOSE REELS
CLIFFORD B. HANNAY & SON, INC.
WESTERLO, NEW YORK

©1952 C.B.H. & S., Inc.

SEE THE NEW

AKRON

MONARCH LIGHT WEIGHT LADDER PIPE

STYLE NUMBER 497

AT THE INTERNATIONAL FIRE CHIEFS' CONVENTION IN BOSTON

Booth 26

Fits All Aerial Ladders including the Latest Types!

1. Fast-acting lever type clamping device. Attached to any style aerial ladder in three seconds.
2. Extremely lightweight, easy to carry and mount.
3. Discharge pipe and nozzle tips made of bronze and chrome plated.
4. Easily maneuvered due to careful engineering and balancing.
5. Friction loss held to an absolute minimum.
6. Efficient stream shapers provided in discharge pipe.

Also see these other revolutionary new AKRON developments:

- Akromist Nozzle with speedy two-way shut-off
- 2½" Akron Full Flow Ball-Type Line Valve with new locking device
- Akron High-pressure Booster Hose Coupling withstands 6,000 p.s.i.

See your Akron Brass distributor or write us for complete information.

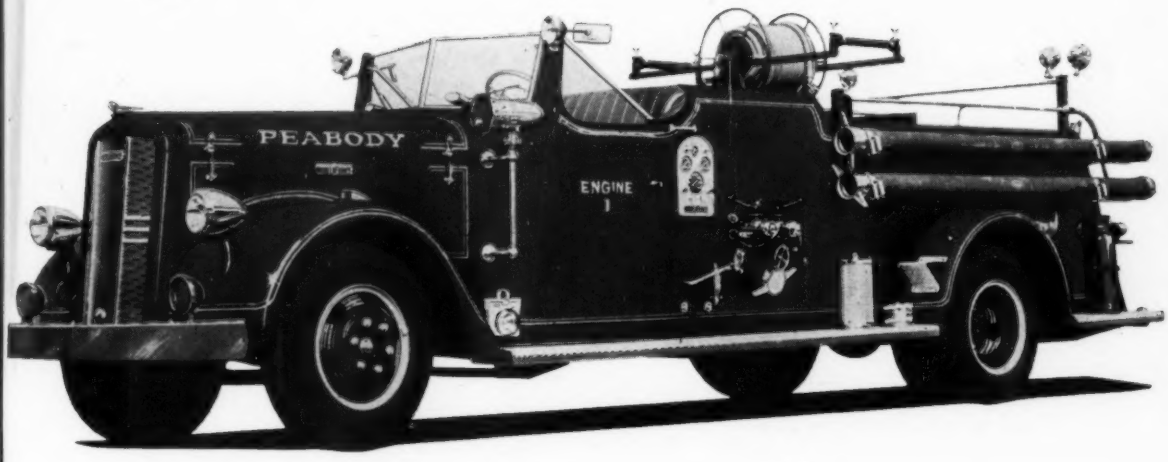
AKRON BRASS MFG. COMPANY, INC.
WOOSTER, OHIO

AKRON BRASS

FIRE FIGHTING EQUIPMENT

3 WARD LaFRANCE Pumpers

. . . for Peabody, Mass.



PEABODY, MASS. — a great industrial and residential city — is one of the fastest-growing communities in the Bay State thanks to its accessibility to main highways and railroads. Like so many cities, this New England community relies on Ward LaFrance for fire protection.

The reason is simple. Through the years, Ward LaFrance Pumpers have demonstrated their ability to perform under a wide range of conditions. These sturdy pumpers come with engines in 130, 150, 200 or 240 H.P. — deliver the weight-to-horsepower ratio so necessary for quick get-aways and climbing hills.

Every Ward LaFrance Pumper features a Waterous split housing pump — surplus gallonage that far exceeds rated capacity — flat horizontal booster tank — exceptional hose capacity — and other equally famous features.

FREE BULLETIN There's a new bulletin that gives full details on Ward LaFrance Fire Apparatus. Send for it today!

New England Agent: I. A. Ballou, Jr.
Dover & Allerton Avenue
East Providence 14, R. I.

WARD LaFRANCE

TRUCK CORPORATION

Fire Apparatus Manufacturers for over 30 Years

GENERAL OFFICE & FACTORY: Grand Central Avenue, Elmira, N.Y.
Tel. 5171

DIRECT FACTORY BRANCH: 139th Street & Bruckner Blvd., New York 54, N.Y.
Tel. CYpress 2-3300

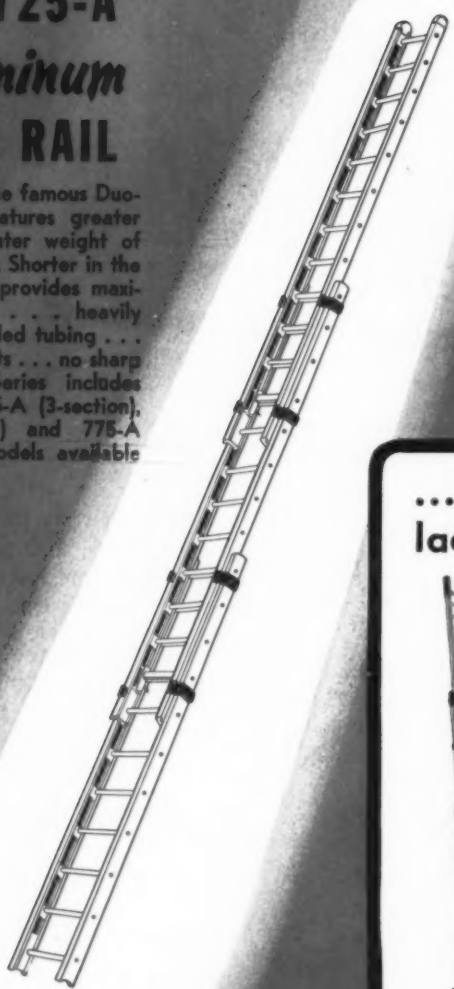
EXPORT: Ward LaFrance International, Inc., Elmira, N.Y., U.S.A.
Cable Address: "WARDTRUCK"

Visit our booth #17 at I.A.F.C. Convention at Boston, August 25-28

DUO Safety FIRE LADDERS

SERIES 725-A
All Aluminum
CHANNEL RAIL

For pumper use . . . the famous Duo-Safety 725 Series features greater strength with the lighter weight of aluminum construction. Shorter in the banked position . . . provides maximum climbing space . . . heavily ribbed rungs of extruded tubing . . . non-shearing steel rivets . . . no sharp or jagged edges. Series includes 700-A (2-section), 725-A (3-section), 750-A (Wall Ladder) and 775-A (Roof Ladder). All models available in standard lengths.



...and a companion ladder in wood

SERIES 200

Popular solid side ladders now being used by hundreds of fire departments. Select Douglas Fir rails and rungs of second growth hickory. Equipped with highest quality fittings. Available in 200 (2-section), 225 (3-section), 250 (Wall Ladder), 275 (Roof Ladder). In all standard sizes and can be built to specifications.

DUO-SAFETY LADDER CORP.

809-11 NINTH ST., OSHKOSH, WISCONSIN

GENERAL

FOG and FOAM **FIRE TRUCKS** HIGH PRESSURE and WET WATER

Municipal and Industrial Fire Apparatus

For almost half a century, General fire trucks and equipment have been serving towns and cities throughout the Nation . . . and throughout the world. Whenever an alarm sounds, General is ready to help do the vital job of fighting fire efficiently . . . effectively . . . economically!

This 200 Horse Power open cab engine is equipped with double ignition and 750 G.P.M. Pump. Custom chassis built by General with special body to accommodate hose and equipment. There are six of these trucks in operation in Dallas, Texas.

Check and mail coupon today

FIRE TRUCK DIVISION
THE GENERAL DETROIT CORP.
25631 LITTLE MACK AVENUE
ST. CLAIR SHORES, MICHIGAN

EXPORT DEPARTMENT
THE GENERAL DETROIT CORP.
22 Worth Street
Room 108, Western Union Bldg.
Manhattan, New York

We will need a fire truck in the near future ☐
Check one ☐ Send us complete information
☐ Have your local representative call on us
☐ We have attached specifications covering the equipment we need

NAME .....
ADDRESS .....
CITY..... ZONE.... STATE.....

E&J...the World-Wide Lifesaver

THESE FOREIGN COUNTRIES AND U. S. TERRITORIES USE E & J RESUSCITATORS

ALASKA
ANGOLA
ARGENTINA
AUSTRALIA
BELGIAN CONGO
BELGIUM
BRAZIL
BULGARIA
CANADA
CHILE
CHINA
COLOMBIA
COSTA RICA
CUBA
CYPRUS
CZECHOSLOVAKIA
DOMINICAN REPUBLIC
ECUADOR
FRANCE
FRENCH MOROCCO
GERMANY
GREECE
GUATEMALA
HAITI
HAWAII
HONDURAS
ICELAND
INDIA
ITALY
JAPAN
MEXICO
MOZAMBIQUE
NETHERLANDS
NEW ZEALAND
NICARAGUA
NIGERIA
NORWAY
PANAMA CANAL
PERU
PHILIPPINES
POLAND
PORTUGAL
PUERTO RICO
RUMANIA
SALVADOR
SAUDI ARABIA
SOUTH AFRICA
SUEZ CANAL
SWEDEN
SWITZERLAND
THAILAND
TIMOR
TRIESTE
TUNESIA
URUGUAY
VENEZUELA

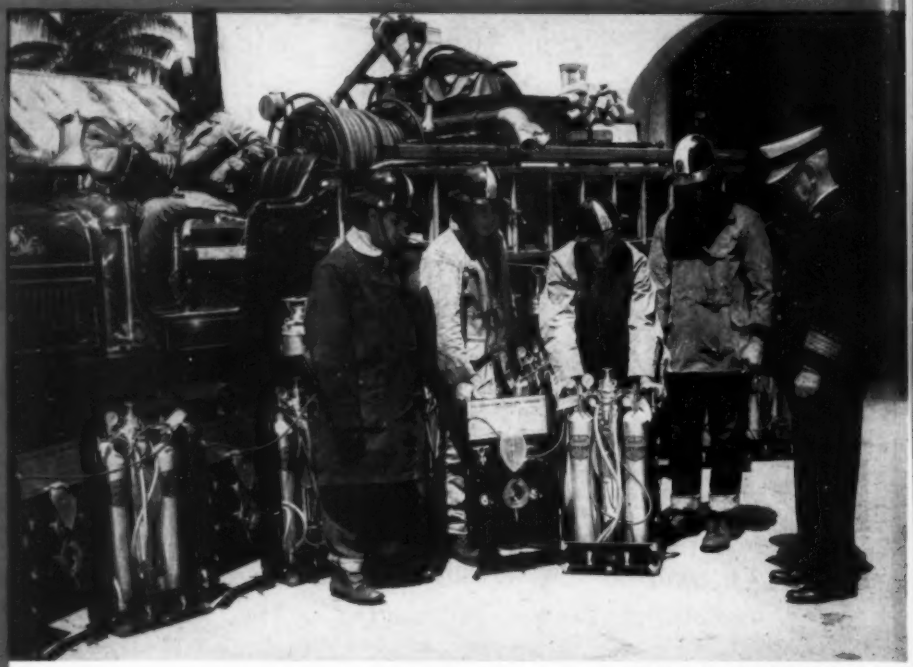
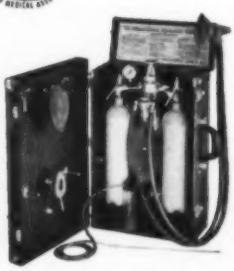


Photo courtesy Honolulu Star-Bulletin

NINE E&J RESUSCITATORS are standard Life Saving Equipment in HONOLULU

Life-saving services in these 57 foreign countries and U.S. Territories, in most cases located thousands of miles from the United States, are unavoidably "on their own" far more than similar services here. Consequently they select their equipment with great care. First, of course, they require equipment that will provide maximum effectiveness of treatment in complete safety for adult, child or infant. Second, it must be so completely automatic in operation and so simple to use that the chance of error in operation or judgment is practically eliminated. But especially important in their case, it must remain highly dependable year after year regardless of extremes in weather or conditions of use and it must remain free from frequent need for repairs. *In every one of these foreign countries and U.S. Territories life-saving services have selected E & J Resuscitators as standard equipment!*

ACCEPTED



E & J RESUSCITATOR • ASPIRATOR • INHALATOR

FROM MOZAMBIQUE TO U.S.A.

Your assurance of saving victims of asphyxiation is greater when you have an E & J Resuscitator available for immediate use. It breathes completely for the victim, using pure life-giving oxygen. It does it automatically, efficiently, safely, tirelessly and with built-in skill. Most hospitals throughout the world use it routinely; Rescue Squads say it is their greatest life-saving tool.

DON'T BE WITHOUT IT!

To see for yourself write to E&J today for a free demonstration

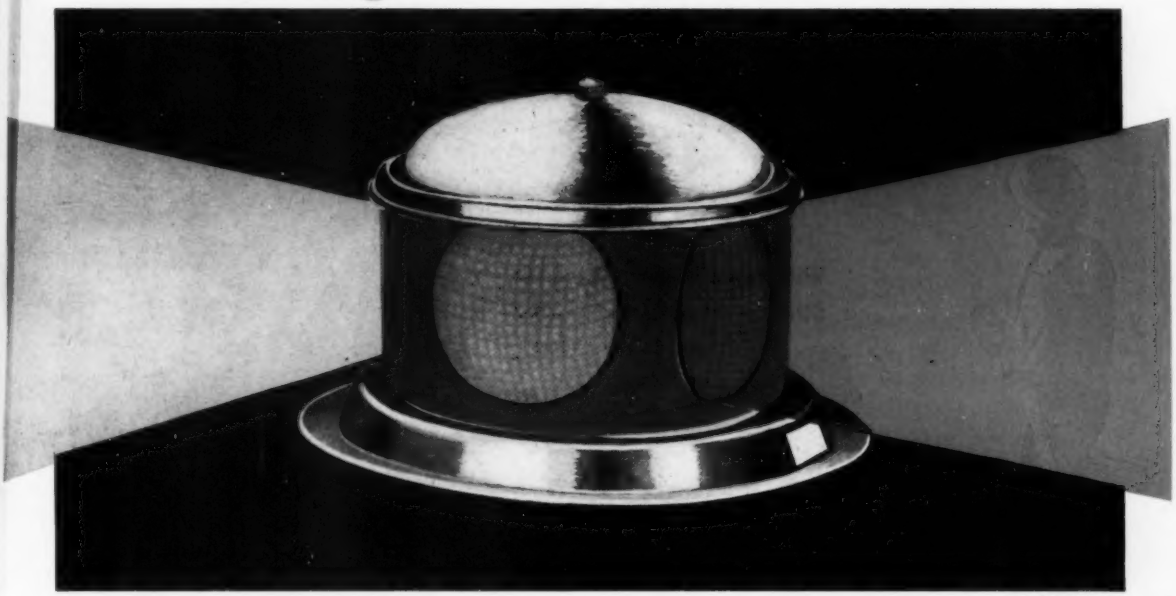
E&J

E & J MANUFACTURING CO., Dept 526-6, Burbank, California

Originator and world's principal producer of automatic resuscitators

"CIRCLE BEAM"

Nothing Moves But The Beam



Model 806 P

DEVELOPED in the laboratories that lead the world in flashing-light research, "CIRCLE BEAM" gives protection forward, to the sides and rear of the vehicle. It uses high-intensity standard sealed-beam lamps, easily replaced. It has low battery drainage, negligible maintenance, and no moving or complicated parts in the light to get out of order.

The individual flashes last long enough so that a motorist can estimate the distance to approaching apparatus, *and get out of the way in time.* Designed with the highest powered beam forward but with adequate intensity to prevent apparatus from being struck on the sides or rear. This also prevents blinding of drivers in trailing apparatus. By the use of synchronized flashing a double beam of light is emitted which moves around as the adjacent lamps are flashed.

Advanced manufacturing techniques bring you quality lights at these low prices:

Model 806 UP in chrome, including flasher, surface mounted for fire chiefs' cars and small trucks $47.61

Model 806 P as above, with flasher, but for larger apparatus $51.21

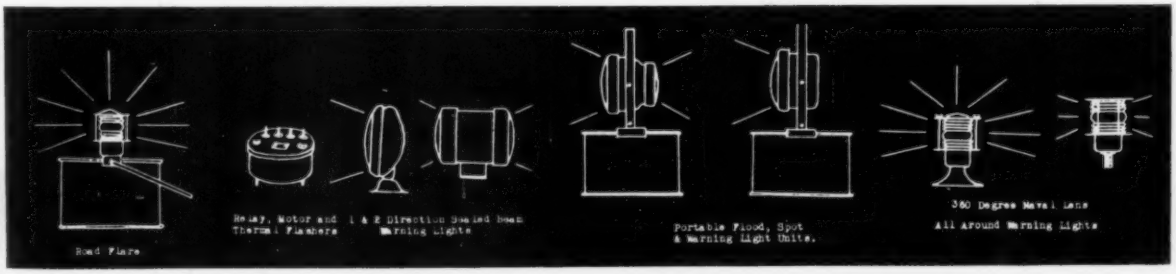
Prices F.O.B. Corona, N. Y. Fed'l Excise Tax not included. When ordering, specify Surface mounting as illustrated, or Pipe Stanchion mounting, also 6 or 12 volts.

Order direct or through your equipment dealer.

"Engineered Lighting for Fire Fighting"

JULIAN A. McDERMOTT CORP. **40-22 NATIONAL ST., CORONA 38, N. Y.**

Consult our engineers on all of your fire department lighting problems.


Road Flare
Relay, Motor and Thermal Flashers
1 & 2 Direction Sealed Beam Warning Lights
Portable Flood, Spot & Warning Light Units.
360 Degree Metal Lens All Around Warning Lights

NEW PORTABLE HIGH-CAPACITY FIRE PUMP

High Pressure • High Volume

in a fire pump one man can carry

The new McCulloch Model 7 fire pump has *more than twice the capacity* of any other self-priming pump of similar weight. Weighing 57 pounds complete, it will more than match the output of pumps weighing well over 100 pounds. Both pump and engine are special, matched units designed for easy portability and high performance.

Special McCulloch 7-hp, 2-cycle engine ★ Special McCulloch self-priming centrifugal pump ★ Automatic-rewind cable starter; no ropes ★ Shielded against falling water ★ Hot spark for fast starting in any weather ★ Lubricated throughout by fuel mixture; no oil reservoirs, grease cups, or stuffing boxes ★ No bearings in pump; non-clogging type impeller mounted on engine shaft ★ Engine controls conveniently grouped in panel ★ Fuel tank built in; 3-way valve for auxiliary tank, if needed ★ Weighs 57 pounds; easy-carry handle at balance center.

Nationwide Sales & Service

PERFORMANCE CHART
(with 10-foot suction lift)

Discharge Pressure PSI	10	20	30	40	50	60	70	80	90	100
Discharge Hd. Ft. Water	23	46	69	92	115	138	161	184	207	231
U.S. Gal. Per Minute	250	227	197	164	130	101	78	54	38	25

5-1200

McCULLOCH

McCulloch Motors Corporation, Los Angeles 45, California
Export Dept.: 301 Clay St., San Francisco 11, Calif., U.S.A.
Canadian Distributor: 220 W. First Ave., Vancouver, B.C.
224 N. George St., Peterboro, Ontario

★ Demonstrations of this remarkable new fire pump can be arranged at your convenience. Send for detailed literature and location of nearest McCulloch Authorized Dealer.

"superior"

says

MR. EUGENE H. HUISH
City Electrician
Chief Electrical Inspector
East Chicago, Indiana

Thank you, Mr. Huish! Every day fire alarm men like yourself, all over the United States and Canada, are discovering that SĀFA offers them a complete and modern line of dependable fire alarm equipment.

FRANK MIGAS
Mayor

City of East Chicago
INDIANA

Office of
EUGENE H. HUISH
City Electrician
Chief Electrical Inspector
Phone East Chicago 128
Columbus Drive & Canal Port

Dear Mr. Smith:

In response to your letter inquiring how your fire alarm system is operating, and whether or not its performance is satisfactory, I am pleased to say that the Superior American Fire Alarm Company central station equipment which was installed in East Chicago in October, 1950, has been in constant operation since its installation, without any repairs or adjustments whatsoever.

This equipment has been found superior to what it was represented to be, and it has functioned much beyond the expectations of our city officers.

We have had many official visitors from other cities who have inspected this system, and we have answered numerous inquiries from municipal officers who are interested in a similar installation. In every instance they have been more than pleased with what they have found in this equipment and its performance.

With kindest personal regards, I am

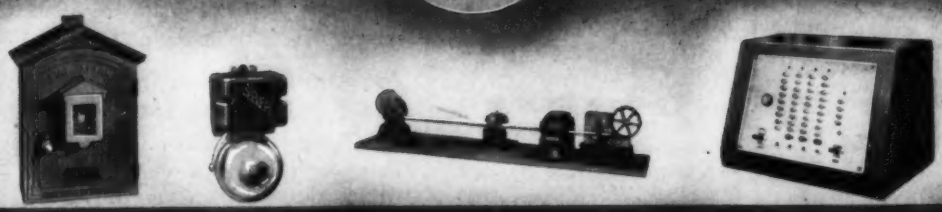
Sincerely,

Eugene H. Huish

EHH:ieg

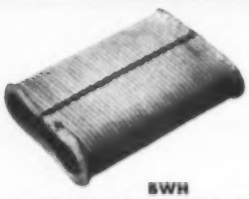
Mr. Hugh T. Smith, Jr., Sales Manager
Superior American Fire Alarm Company
Meriden, Connecticut

WE CAN SUPPLY ALL YOUR NEEDS — SĀFA — BE SAFER WITH SĀFA



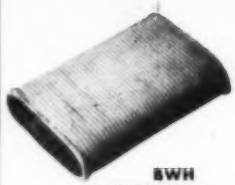
SUPERIOR AMERICAN FIRE ALARM & SIGNAL COMPANY
85 TREMONT ST., MERIDEN, CONN.

WEST COAST — SUPERIOR AMERICAN FIRE ALARM & SIGNAL CO. OF THE PACIFIC
SOUTHEAST — SUPERIOR AMERICAN FIRE ALARM (Southern) CO., 200 S.W. FIFTEENTH ST., FORT LAUDERDALE, FLA.
CANADA — GENERAL SIGNALS REG'D., 1145 LAURIER AVE. W., MONTREAL



BWH
"BOSTON FIRE JACKET" HOSE
Double Jacket

Heavier, stronger fibers, perfect adhesion, smooth, friction-resistant water-way. Rates tops in every test!

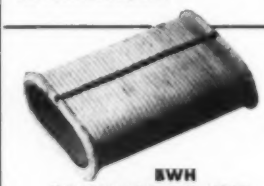


BWH
"MILO" HOSE
Single Jacket

For long, trouble-free performance in communities where a light service hose is adequate.

BWH
"PARAMOUNT" HOSE
Double Jacket

Designed for easy handling and long service on tough jobs. Ages well, withstands high pressures.



BWH
"UNDERWRITERS" HOSE
Single or Double Jacket

Made in strict accordance with the National Board of Fire Underwriters' specifications. Labeled or unlabeled.

The best answer to a fire's challenge is preparedness . . . well-drilled, able personnel . . . alertness . . . adequate alarm systems . . . up-to-date, well-maintained apparatus.

And, in this latter regard, when it comes to hose you will always be ahead of your deadly enemy when your hose bears the famous, world-respected BWH trademark.

For here is hose built and engineered *specifically* for the extra-rugged duty demanded by fire-fighting conditions . . . always dependable . . . always "there when you need it."

Another Quality Product of

BOSTON WOVEN HOSE & RUBBER COMPANY

Warehouse Stock: 111 N. Canal St., Chicago, Illinois **Distributors in all Principal Cities**

PLANT: CAMBRIDGE, MASS. • P. O. BOX 1071, BOSTON 3, MASS., U. S. A.

BWH
DEPENDABLE RUGGEDNESS

Only JOHN BEAN *gives you both at once!*

RUGGED AND dependable John Bean HPV Fire Fighters are available in 500-, 600-, or 750-GPM capacities.

Two-fisted HPV Fire Fighter delivers unlimited hitting power

JOHN BEAN two-pump design makes the HPV Fire Fighter the most remarkable piece of equipment of its kind.

Because it combines volume and high-pressure fog, the John Bean HPV Fire Fighter is "first call" for any fire . . . under any conditions!

Two lines of fast-striking, true, high-pressure fog—which draw from the unit's own water supply—can be put into action instantly.

At the same time, when adequate water supply is available, three volume lines are ready to slug it out with the toughest of fires. And, of course, both sides can be operated together at *maximum efficiency!*

Protect your community with this revolutionary fire fighter that's years ahead of its nearest competitor. Write today—and ask for full information on John Bean HPV Fire Fighters.

John Bean Division
Dept. 126
Lansing 4, Michigan

JOHN fmc BEAN

TWO-FISTED FIRE FIGHTERS

Can be mounted on most standard truck chassis

John Bean Division
P. O. Box 145
San Jose, California

A PRODUCT OF FOOD MACHINERY AND CHEMICAL CORPORATION

Safeguard OUR NATION'S INDUSTRY

Dependable fire protection for defense and civilian industries is vital, and the fire signaling system is the first line of defense against fire. Insist on GAMEWELL Fire Signaling Equipment — it has proven reliable, efficient, and durable.

TRADE MARK
GAMEWELL
REG. U.S. PAT. OFF.

The GAMEWELL COMPANY
NEWTON UPPER FALLS 64, MASSACHUSETTS
IN CANADA: NORTHERN ELECTRIC COMPANY, LTD., BELLEVILLE, ONTARIO

FIRE ENGINEERING

AUGUST, 1952 VOL. 105, NO. 8

With the Editor

Seventy-Five Years of Service Seventy-five years ago, Col. Clifford Thompson, editor of *The National Fireman's Journal,* predecessor of FIRE ENGINEERING, which had only just flashed across the horizon of the nation's fire service, read an essay on the "Literature of the Fire Service," before the National Association of Fire Engineers, today the International Association of Fire Chiefs.

In this, Col. Thompson said: "A Frenchman once determined to write the history of Ireland and, among other things, he resolved to devote an entire chapter to consideration of the Frogs of Ireland. But, it developed there were no frogs in Ireland! So," continued Col. Thompson, "when I came to look about me for the American Literature of the Fire Service, I found that America had no such literature. However," he concluded, "if the American literature of the fire service is, like the Frenchman's frogs in Ireland, an unknown quantity, there is nevertheless a fine literature rich in research and accumulated facts and experiences. This literature consists of able works written by practical firemen of the old country, upon the fire service in general; of pamphlets and essays, treating of special features of the service; and of essays and learned papers read before the various scientific associations of Europe."

Thus, to fill this omission and provide this nation's growing fire service with the literature of its trade and profession, the Journal that is now celebrating its Seventy-Fifth Anniversary, came into being. It was first called *The National Fireman's Journal* and its editors introduced it "with considerable diffidence."

The first ten years of the life of *The National Fireman's Journal* were the hardest. At the time there were business and engineering publications and the publishers had a difficult task demonstrating to the fire service, then in a state of flux, that there was a definite place in the publishing field for such a Journal.

Manufacturers of fire apparatus were few, as were paid fire departments and professional firemen. And the great predominance of volunteers, who did not look upon fire suppression as a lifetime career, made the survival of the Journal difficult in the extreme.

But the founders carried on against overwhelming odds.

In 1879 the name was changed to *The Firemen's Journal.* But things continued tough.

A sudden change in its fortune, however, occurred in 1886 when a man joined the Journal who was destined to pilot it to success and influence. He was Frederick W. Shepperd, uncle of the present Editor-in-Chief.

In seven months Mr. Shepperd had placed the publication on its feet. Soon after he assumed control of the Journal, he changed its name to *Fire and Water,* in appreciation of the close relationship of the two fields of fire protection and water supply.

During the next 33 years, under his direction, *Fire and Water* increased in stature and in importance, reflecting Mr. Shepperd's inexhaustible knowledge of the fields which it served, and in which he labored. For the first time in its history the fire service had a friend at court. In this effort it became the unqualified supporter of the International Association of Fire Engineers and of all worthy and progressive policies, plans and programs for advancement of the growingly important business of fire suppression and prevention.

In January, 1904, *Fire and Water* changed its name to *Fire and Water Engineering* to better dignify the professions of fire engineering and water works engineering, which it served.

This name was retained until January of 1926, when, because of the growth of the services, *Fire and Water Engineering* was separated into two publications, each serving its distinct field: FIRE ENGINEERING for the fire service and WATER WORKS ENGINEERING covering the water works field. At that time, FIRE ENGINEERING absorbed *The Fire Engineer,* a leading monthly fire journal.

Failing health had compelled Mr. Shepperd to retire in 1918 and three years later he died in Brooklyn. The present publishing organization was formed in 1925 and since that time, editorial direction of FIRE ENGINEERING has rested with the present editor. From time to time new faces have been added to the staff, but there has never been a departure from the publishing principles set down by the Founders. Today, after 75 years, FIRE ENGINEERING proudly continues as the Journal of the Fire Service; edited and printed for the Fire Service.

In living up to the standards established by the founders and mindful of their responsibilities, the Editors hope that at the close of the next three-quarter century mark, a fire service of the world may say of those who then publish the present Journal, as may so well be said of the Founders: "Well done, thou good and faithful servants."

Fred Shepperd

Seventy-Five Years of Progress In Fire Control

By FRED SHEPPERD

THE past seventy-five years have seen a complete revolution in fire apparatus and fire fighting equipment, as well as fire hazards to be controlled by such equipment.

During that period there was continual race between new fire hazards, and new fire equipment and methods to control these hazards. Fortunately, the race was never close—fire fighting advances outstripped the development of fire hazards.

As is generally known, water has been, since the dawn of history, the most commonly employed agent for the extinguishment of fire. It still stands as number one extinguishing agent, although many new agents have been developed in recent years to control fire hazards involving new chemicals, new materials of manufacture, and large and more complex industrial establishments.

Through all of these years, the chief concern seems to have been the provision of machines for projecting water, or delivering it to fires in buildings, as they grew in height and area. With the advent of the steam fire engine, about the middle of the past century, together with the development of ladders, fire escapes, fire towers, standpipes and sprinkler systems, fire departments have been able to keep the problem of fires in these enlarged structures well in hand.

But change in size, area, and construction of buildings alone did not constitute the only problem for the fire service. The forerunner of many extremely hazardous products appeared on the market approximately seventy-five years ago. Coal oil, or kerosene, quickly became an article of commerce. While the manufacture of kerosene from petroleum was a simple process, and no huge distilleries were involved, the danger of this new hazard was early apparent to the fire service. The implications of its fire hazards were recognized as far back as 1870 by the fire service. In that year, the City of New Orleans passed an ordinance which provided: "It shall hereafter be unlawful for any person or persons, firm or corporation, to sell, give, or deliver any kerosene oil or other illuminating oil or oils, or any illuminating fluid or fluids, derived fully or in part from coal or petroleum, except in the manner hereinafter specified; that is, if the quantity so sold, given, or delivered, shall exceed five gallons in amount, the person or persons, firm or corporation, making such sale, gift, or delivery, shall before actual delivery thereof, place, or cause to be placed, such oil or oils, fluid or fluids, in wooden casks or metallic vessels, of such quality of structure as to be thoroughly tight and secure; they shall before actual delivery thereof, attach, or cause to be attached, securely to the cask or vessel containing such oil or oils, fluid or fluids, so sold, a card, label, or tag upon which shall be printed in plain type not less than three-eighths of an inch in height the words 'flammable at—degrees Fahrenheit.'" In 1877, seven years later, a special committee of the International Association of Fire Chiefs recommended that if the quantity of such oil exceeds five barrels, it should be "kept in a fireproof magazine outside corporate limits, or that least isolated from other property."

Since then the use of petroleum products has grown at a bewildering pace. It is only necessary to point out a few of the petroleum products which are common articles in the everyday life of the average person. Gasoline, kerosene, fuel oil, cleaning agents and solvents find use in every section of the country and in almost every industry. Further, there are a whole array of other products from petroleum base, ranging from ether to tar. As these products grew in number and usage, the fire hazards thereof increased in proportion.

Fire fighters of seventy-five years ago never had a fire of this type to handle. Photo shows a bulk petroleum plant fire in Indianapolis, Ind., in 1950.

Had the fire service remained stationary, and had it not developed new methods of fire control to meet these new hazards, the destruction of property by fire would have been terrible to contemplate.

Petroleum products were not the only flammable liquids brought into the market in these eventful years. There are today over 250 commonly employed flammable liquids which have widespread use. While the majority of these are secured from a petroleum base, a large number are derived from other sources.

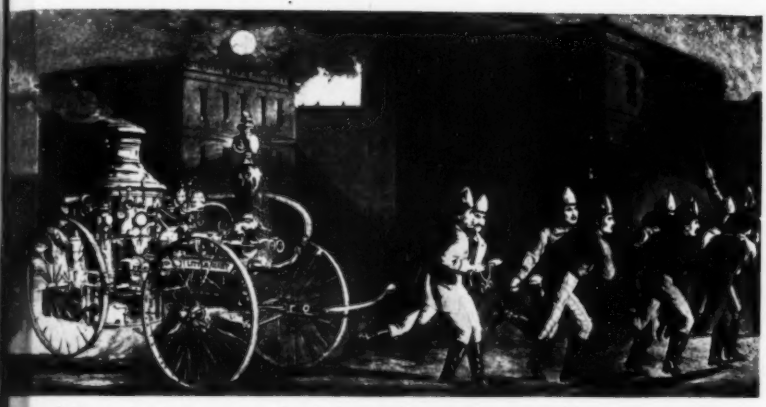
Numerous types of alcohol alone have been developed for industrial purposes, each having its own distinctive characteristics and uses.

Typical of other flammable liquids which are today encountered, and which present specific problems in fire protection, may be listed acetone, carbon disulphide, lacquers and thinners, and butadiene. Each represents a distinctive fire fighting problem.

In addition to the flammable liquids, a great number of chemicals in solid, liquid and gaseous form have also been introduced through industrial advance. Just a few of these will be cited to indicate the wide range of hazards which must be faced by today's fire fighters.

First we have the chlorates, nitrates and peroxides. All of these materials are oxidizing agents, and expedite the burning rate of carbonaceous materials whether air is available or not. Some of them, when in contact with carbonaceous materials, became explosive.

Fire potentialities of present-day chemicals were demonstrated by the Texas City, Tex., fire of April 6, 1947. Fire in shipload of nitrate fertilizer resulted in explosion and fire which caused many fatalities and millions of dollars in property loss.



One of the early steamers were hand drawn. Here is shown a Silsby steamer on its way to a fire.

Then we have chlorine gas, which as found very wide use in chlorination f water and in sewage treatment, as ell as a bleaching agent. This material s chiefly hazardous because of its high- y corrosive nature. A trace of it in the ir may cause dangerous illness when nhaled for a period of one-half to one our.

Hydrocyanic acid, nitric aid, sulfuric id and picric acid are acids which have ound wide usage in industry. All of hem constitute hazards to personnel. ases thrown off by some of them, hen exposed to fire, are deadly; others e highly corrosive.

Refrigerants which have come into ide usage since the first of the century nclude a number of gases which are azardous to life, specifically ammonia d sulfur dioxide. Fortunately, new ases are being developed which, while mbustible, do not represent a life azard.

During recent years a great array of lastics have been developed, some of hich are highly combustible, partic- arly those made of a pyroxylin base. ere, too, a severe hazard exists hrough the generation of toxic gases hen the plastics are consumed by fire. ortunately the greater percentage of he vast number of plastics are not con- idered flammable, nor do they throw f poisonous fumes when burning.

The previous chemicals have been ted as evidence of the complexity of day's fire fighting problem, as com- ared to the problem of handling fires enty-five years ago.

Not only do the individual chemicals present hazards, but industries them- eves combine, in many instances, any of the hazards represented by arious chemicals and flammable liquids ted previously.

A representative group of modern in- ustries are covered in the following aragraphs, chiefly with the purpose of howing how the development of indus- ry during the past seventy-five years as brought forth highly complex, azardous processes.

First is the hazard represented by nishing processes, that is, plating, ainting, spraying, varnishing, lacquer torage and handling, spontaneous igni- ion of residue in spray booths, dip anks, drying ovens, and storage of angerously flammable liquids. Such nishing processes are found in practi- ally all big industries today.

Then there is the hazard of dust pro- uction in industries such as wood- workers, mechanical rubber goods manufacturing, flour mills, grain elevators and modern power plants using powdered coal as a source of energy. Unless proper provision is made for the collection and handling of such dusts during their production, serious fire hazards result. The lodgment of dusts on ledges, rafters, or other points of repose create a possible hazard in the event of a fire, for fire streams or other means of dislodging the dust may create a dust-laden atmosphere which may result in a disastrous explosion.

Huge clothing factories, of large floor area, wherein tremendous quantities of light, flammable goods are fabricated, constitute a particularly severe life and property hazard. Seventy-five years ago the manufacture of clothing was chiefly by hand, and the hazard was negligible. Today, with the electrical driven sewing machines lined up over large floor areas, and garments stacked loosely throughout the area, the fire and life hazard is extreme. It need only be pointed out that on one floor of such a factory 143 girls lost their lives some years ago in New York City due to a flash fire.

The automobile industry, in its many phases, is a relatively modern development. Whether factories, service stations or garages, these structures, which in many cases are of large area and undivided, constitute a severe hazard and a difficult fire fighting problem, due to the presence of large numbers of units with gasoline in their tanks, and the presence of flammable lacquers, synthetic fabrics and upholstery.

Oil refining, shipment and storage, and paint and varnish works represent similar hazards which have grown in number and size during the past seventy-five years. The fire hazards of these institutions and the difficulty of controlling fires therein when once started are fully appreciated by most fire departments.

While the industries listed represented but a small percentage of the ones which have come into being during the industrial advance of this nation, they do give a fair picture of the great increase in the responsibilities of fire fighting forces. Fortunately, fire extinguishing equipment has been developed to handle the new hazards as they have been created.

So much for materials involving hazards.

The general industrial advance of the country has brought about major changes in building construction. Buildings have become taller and of larger areas. Completely enclosed buildings, artificially lighted and air conditioned, are becoming popular.

Fire fighting hazards in connection with tall buildings and buildings of large area can well be appreciated. But the hazards are multiplied tremendously when these buildings are so closed in that the fire fighters can not gain ready access to any floor of the structure. Furthermore, the ducts used for air conditioning in some instances may provide channels for rapid spread of fire

Last of horse drawn apparatus (steamer and hose wagon) at Philadelphia, heading a parade celebrating the 75th anniversary of that department in 1946.

One of the first ladder trucks used in this country. The oxen got the truck to the fire, but no speed records were broken.

and smoke throughout a structure.

From the fire fighting standpoint, the modern fully-enclosed building constitutes about the worst problem encountered. Some such structures are used for retailing of articles of highly flammable nature; many of these articles give off toxic gases when burning.

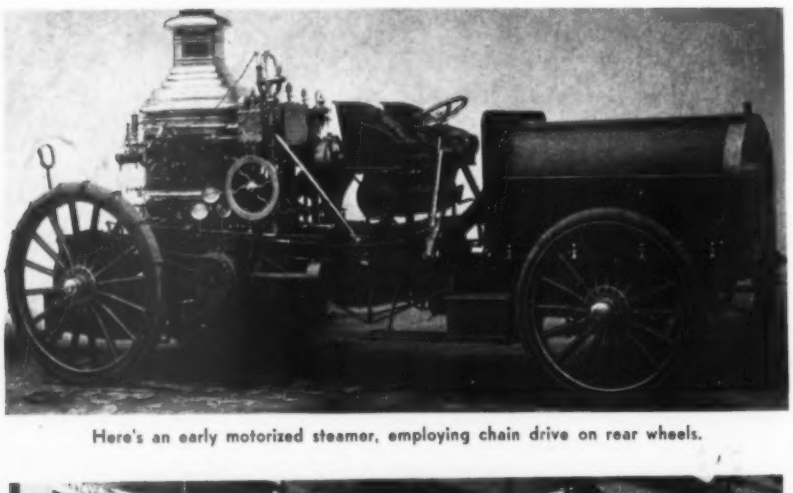
The application of air conditioning equipment to buildings already built adds still another problem for the fire department today. Unless such systems are carefully designed and carefully installed, hazards may be created which will multiply the work of fire fighters manyfold.

Fire Control Facilities Have Kept Pace

Fortunately, as new fire hazards have been developed, the fire apparatus industry has been able to produce extinguishing mediums and methods capable o handling these new hazards. It has be able to provide at least one extinguis ing agent for each special hazard, an in addition, has produced additional e fective extinguishing mediums for m of these hazards.

The development in fire fighting equ ment, and fire fighting methods, whi were to match the growth of hazar over the past seventy-five years are s forth in the following paragraphs.

Typical horse drawn aerial ladder of the early 1900's.



Here's an early motorized steamer, employing chain drive on rear wheels.

Christie tractor on steamer in New York. This unit is now in the Fire Department Museum.

Steamers Replace Hand Engines

While the first successful steam engine was built in Cincinnati in 1852 was not until well in the 1880's that c version from hand pumpers over steam operated pumpers was quite g eral throughout the country.

Early steam fire engines were s propelled, designed along the line locomotive propulsion. But these u were invariably so heavy that they w abandoned after a few years in favo the horse-drawn unit.

Steam fire engines were built in different sizes as follows:

Third Size, 550 gallons per minute
Second Size, 700 gallons per minut
First Size, 900 gallons per minute
Extra First Size, 1,100 gallons minute.
Double Extra First Size, over 1, gallons per minute.

These discharges were at net pu pressure of 120 pounds per square in

With the development of success automotive equipment, many steame were subsequently tractorized with towing unit, or fitted with a front dri arrangement whereby the motor mou ed over the two front wheels power these wheels to propel the steamer.

Early in the Twentieth Century, th appeared on the market two designs horse-drawn, gasoline pumping engi These consisted of internal combusti engines driving a pump, mounted on special running gear, or chassis, wh was horse or hand-drawn. These t units (Westinghouse and Waterou gained some headway until the adv of the motor propelled and opera pumper.

Many fire departments claim to ha been the first to employ motor propell and operated pumps, but the first re larly designed and built motor fire gine appeared on the market in 19 From that time on, with the impro ment of the internal combustion eng and the automobile truck in gene motor fire apparatus gained tremend headway. By 1925, motor fire appara had practically replaced steamers in partments large and small through the country.

With the development and impro ment of motor fire apparatus, gre discharges at higher pressures were complished. In these respects, mo fire apparatus today is far ahead of best that was ever built in the way steam fire engines. For example, steam fire engine was ever built to p duce a water pressure of 600 pounds square inch such as has been delive by modern motor fire engines of spe design.

Motor fire engines of four gen types are today found in the fire serv These are:

a. Double combination (pump hose)
b. Triple combination (pump, and booster or chemical tank)

c. Quadruple combination (pump, hose, booster or chemical tank and ladders similar to those carried on a city service truck)
d. Quintuple combination (Quint), which carries the same equipment as the quadruple combination with the exception that an aerial ladder has been added.

Today the largest pumper built has a capacity of 2,000 gallons per minute, although this is topped by a duplex unit in service in Los Angeles, Cal., where two separate pumps and two separate motors are mounted on the same chassis, and deliver a total of 3,000 gallons per minute.

It will be noted that the trend has been towards larger, more efficient pumping engines, delivering higher pressures and greater discharge. This is in line with the need for operating on fires in larger structures, and of greater area, which is the trend in building construction.

It should be pointed out, however, that there is one limitation to the maximum capacity of fire engines, and that is the availability of water for their supply. In most cities they can be used in but a limited area, where large mains are present; in other areas, the flow of water available from hydrants and through mains may be insufficient to meet the capacity of the pumper.

Hose Wagons

There was no place on the steam fire engine to carry hose, so it was natural that a hose wagon, or tender, accompanied each pumper. Thus each steam fire engine company was therefore a two-piece company. However, with the advent of motor apparatus, on which hose could be carried along with the pump, many cities discontinued the use of hose wagons. Some large cities, however, still run two-piece companies made up of a double or triple combination pumper and a motorized hose truck as well.

Chemical Wagons

Following the invention of the soda and acid extinguisher and its successful development, it was not long before the chemical engine appeared in the fire service. The chemical engine consisted of soda and acid chemical tanks mounted on a running gear, or chassis. Some of the units carried hose, and were known as chemical and hose wagons. The sole purpose of the use of soda and acid in connection with the unit was to create a pressure which would discharge the water in the tank through the chemical hose on to the fire.

Chemical tanks were also employed on double, triple and quadruple combination trucks until it was found that a more practical arrangement was to employ water tanks, commonly known as booster tanks, instead of the chemical tanks; the water by-passed from the tank, or tanks, through a pump to the hose. In this case, the pump provided the pressure, and continuous operation, where water was available to pour into the booster tank, made the unit more effective than the chemical tank.

Tank Trucks

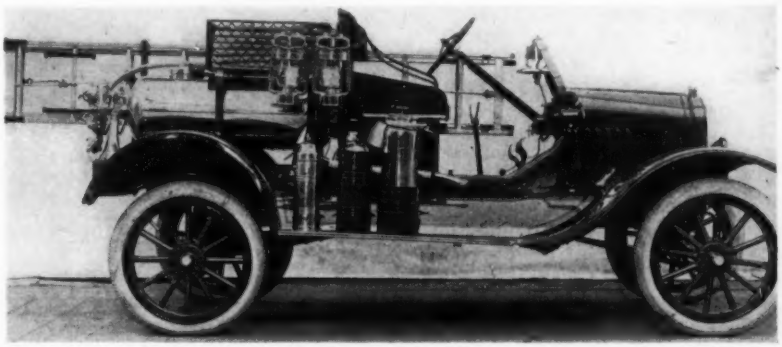
Tank trucks are a comparatively recent development in the fire service, and by their use water is brought to a fire where it would otherwise be unavailable. Tank trucks are usually fitted with a suitable pump, and some carry up to 3,000 gallons of water. They are very effective in rural sections and suburban districts of large cities at which points water mains or other sources of water are not available.

Foam Trucks

Foam trucks are units which have proven particularly valuable in areas where oil properties are located. The unit usually carries foam powders or other foam chemical in quantity, with the necessary hose, together with foam generators (where foam powders are employed.)

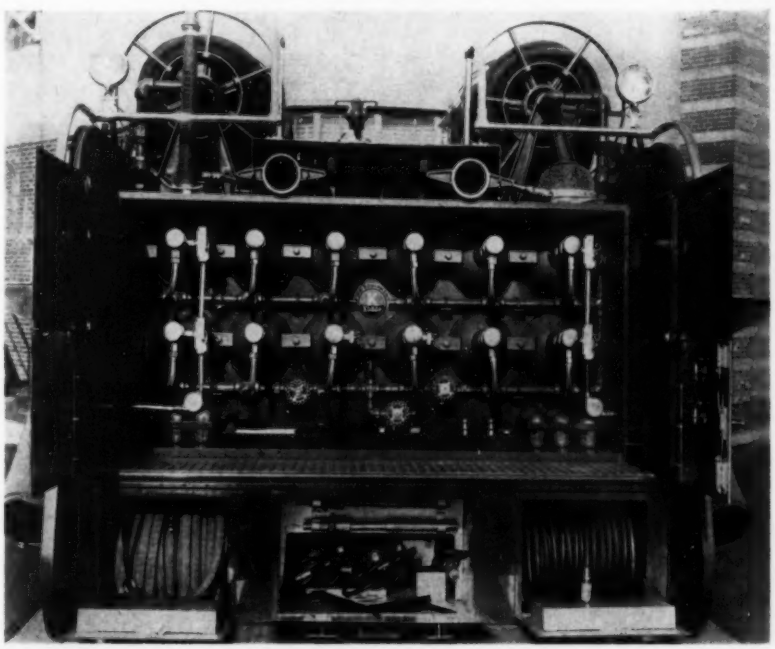
Carbon Dioxide Trucks

These units may either carry high



An early automobile chemical truck. The Ford Model T powered many of the newcomers in the field.

Three-ton low pressure carbon dioxide truck, combined with a 600 g.p.m. water pump, for protection of oil property.



Rear of all-purpose fire truck showing truck's supply of twelve 100-pound cylinders of carbon dioxide under pressure of 850 pounds per square inch. The hose reels shown on the truck's upper deck and in the lower compartments are used in dispensing water, fog, foam, or carbon dioxide. Two 50-pound carbon dioxide portables can be seen in the center compartment.

pressure carbon dioxide in cylinders, connected by manifold, to discharge lines, or large tank either refrigerated or non-refrigerated. The latter two are quite widely used in protecting aircraft at airports. Newer designs of these latter carbon dioxide trucks include foam and fog facilities also. The fire is snuffed out with carbon dioxide, and rekindle is prevented by the use of foam and fog, or both.

Wet Water Trucks

These are a new development, following the application of wetting agents to water used in extinguishing certain types of fires.

One city (Miami, Fla.) employs wet water trucks which respond to a large percentage of the fires in the high value districts of that city, and provide water with the proper amount of wetting agent to accomplish quick penetration of the water into materials which would normally shed plain water.

Water Towers

The first water tower was developed by John B. Logan and Abner Greenleaf of Baltimore, Md., and delivered to New York City. The second one was delivered to Boston, Mass. This first water tower could be erected to a height of 50 feet; in other words, a stream could be delivered from the pipe on the end of the tower at a height of 50 feet above the street. This unit improved operations on high fires. The water tower served well but no new one has been built for possibly eight years, as the metal aerial ladder performs the functions of the water tower (in connection with ladder pipes) and provides aerial ladder facilities as well.

Ladder Trucks

Ladder trucks date back to the days of the hand engine. New York City, for example, in 1722 had the first truck to carry ladders to fires, although ladders were used before that time and were transported to the scene of the blaze by other means.

The first aerial ladder, however, was not invented until 1866, by a San Francisco fireman by the name of Daniel B. Hayes. He designed extensive improvements to it ten years later, and the line of Hayes aerial ladders, which led the field for many years, was the outcome. The first ladder trucks were hand drawn, but as they became larger, they were transported by horses.

One of the first tractorized aerial ladder trucks in New York City.

Aerial ladders were horse-drawn from the start. With the advent of motor vehicles, many aerials were tractorized (tractor being attached to the ladder truck) and some such units are still in service.

With motorized fire apparatus, many large cities use the tractor type, aerial, a four-wheel tractor attached to the ladder truck, while smaller cities definitely prefer the four-wheel aerial without tiller.

The development of the metal aerial ladder, with its multi-section, shorter overall length, has added impetus to the trend toward four-wheeled unit. Metal aerial trucks are apparently destined to replace their predecessors, the wooden aerials.

Searchlight Trucks

While the modern searchlight truck is fairly common today, New York City back at the turn of the century had a floodlight unit driven by an old steam fire engine. The pump was replaced by a generator, and floodlight mounted on the unit. This was probably the first floodlighting unit in service in the country.

Searchlight truck in operation at a large fire in New York. Proper illumination of fire grounds speeds up the work of the fire fighters and reduces danger of accidents.

Rescue Trucks

During the past decade many fire departments have installed rescue trucks, for operating at fires, and other emergencies. The equipment of these trucks varies with local needs and wishes, but nearly all contain sufficient equipment to handle any commonly encountered emergency.

Extinguishers

Development in new fire extinguishing agents has probably shown even greater progress than the development in pumping apparatus. The first chemical extinguisher, the soda and acid type, was brought out in 1869. Since that time seven additional extinguishers, each having special fire extinguishing qualities, have taken their places in the field. These other extinguishing agents include gas cartridge expelled (water) type; anti-freeze type (water mixed with anti-freeze chemicals); foam; carbon dioxide, carbon tetrachloride; chlorobromomethane; and dry chemical. In addition to the above, the pump type extinguisher has found extended use in the field. The back-pack type is widely used in handling brush and forest fires, in addition to its regular employment by fire departments in cities and towns. The other type of pump extinguisher is placed on the floor and the pump operated while the extinguisher is in this position. Each of the two uses water as the extinguishing agent.

The dry chemical type of extinguisher has shown marked increase in application in recent years due to its effectiveness on certain types of fires. Not only is dry powder used in portable extinguishers, but it has recently been developed for use in systems similar to sprinkler systems. A number of leading manufacturers of other fire extinguishers now produce dry chemical extinguishers. Some companies specialize in this field alone.

Hose

Seventy-five years ago cotton rubber-lined hose was just starting to replace leather hose, which had served well for

possibly a half century. Today, cotton rubber-lined hose is used by practically every fire department. The most popular size is 2½-inch, with 1½-inch hose gaining popularity.

The latter small diameter hose has proved particularly effective for the first line in at small fires, and in a great majority of cases is able to extinguish the fire without the need of larger streams supplied by 2½ inch.

Wetting Agents

The desire of fire departments to reduce water loss at first has been one of the major factors in changing the methods of fire extinguishing. With the discovery that water treated with certain surface tension reducing agents penetrated quickly into burning materials, treated water has been used with success by fire departments. It is gaining in popularity, for a smaller quantity of it will accomplish as effective results as a much larger quantity of plain water. Even on charred wood surfaces, wet water, when applied in the form of a spray, quickly sinks in. On the other hand, plain water applied to such a surface "rolls" off. Fire burning within overstuffed furniture or in cotton bales, rolls of cloth, etc., can not readily be reached by plain water, whereas wet water will penetrate quickly to the zone of combustion and effect extinguishment.

Foam Equipment

Major strides have been made in the application of foam and foam equipment in the control of fires involving volatile flammables. Probably no other factor has had such a great effect upon the control of fires involving petroleum as foam.

Two types are at present on the market, namely, chemical foam and air foam.

The former is produced through the reaction of chemicals in the presence of water, creating foam made up of little bubbles each of which entrains carbon dioxide gas. Air foam, on the other hand, is a foam made up of bubbles containing air. Each has its place in the fire service and each has performed most effectively in controlling the fires on which its application is indicated.

Water Fog

Although water fog nozzles were made back in 1890, the possibilities of water fog as an extinguishing agent were not recognized until 1915, when it was applied on petroleum fires in Southern California.

Since then a great advance has been made in its use, and today nozzles are built for producing fog for extinguishing fires involving even high voltage electrical apparatus. Properly applied, it can control many petroleum fires as well as the average run of fires encountered by fire departments. So effective has water fog proven that today sprinkler heads are being made to discharge a water fog for the protection of special hazards.

Siphons

To dewater basements after floods, or after fires, and to lift water from deep excavations, siphons have proven an effective tool for modern departments. They prevent injury to costly fire apparatus where grit may be encountered in the water handled. Siphons of special design are also employed for bringing water from the source of supply to the pumper, where pumper cannot otherwise get within range of the source of supply.

Portable Pumping Units

Portable pumping units have found a place in the modern fire service. They are highly effective in handling fires in mountainous areas or in areas where fire apparatus cannot roll. In addition, these units have proven effective for delivering a supply of water to regular fire apparatus from a remote source of supply. Because of their size, they can be carried by hand to otherwise very inaccessible points.

Smoke Ejectors

Although smoke ejectors are not yet widely used, they have been gradually increasing in use as their function is better understood. Three types are available, namely, units operated by electric motor, by gasoline motor or by compressed air. A smoke exhauster powered by a hydraulic motor was tried out some years ago, but it proved less convenient than the other three types.

Floodlights

Up to 1930, few fire departments used portable floodlighting equipment. Today, however, these units can be found in the large as well as the small department. Even New York City carries portable lighting plants on the running boards of ladder trucks.

This innovation has aided tremendously in speeding up operations at night fires, and preventing accidents. A generator, with floodlight, can be set up in a back alley, or on a dark street, and by furnishing effective illumination, can increase the efficiency of fire fighting operations.

Masks

Another factor which has aided in efficient fire fighting in recent years has been the provision of proper respiratory protective equipment. Canister masks, oxygen generating masks, and demand type breathing apparatus have all proven effective in enabling fire departments to get at the seat of a smoky fire. When these units are more widely employed, injuries among firemen may be expected to drop spectacularly. In addition, firemen protected with suitable types can advance quickly into smoke-filled buildings and remain, in many cases, until the fire is brought under control. The universal use of respiratory equipment will probably have a greater effect on the reduction of fire losses than any other single factor.

Seventy-five years ago no such equipment was available.

Forcible Entry Equipment

Of lesser importance, but still a factor in efficient fire extinguishing operations, is the use of forcible entry equipment. Many items in this classification have come into general use since the turn of the century. Oxy-acetylene torches, bar cutters, lock breakers, etc., have all found valuable service in the modern fire department.

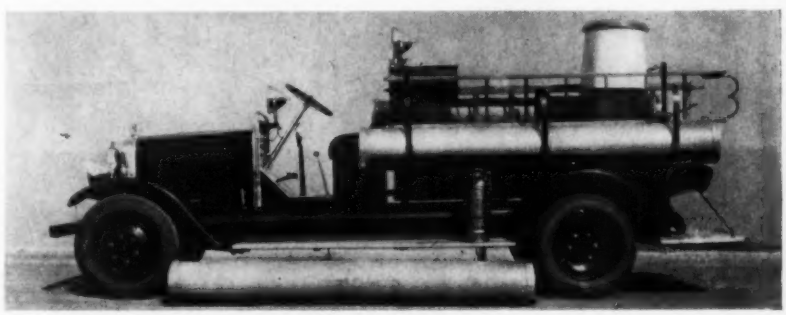
Fire Fighting Methods

As stated previously, the fire fighting problems of today are of far greater complexity than those of seventy-five years ago. Structures are taller and larger; contents are frequently highly complex; many new hazardous materials are employed both in construction and in processes carried on in the building; many entirely new hazards may be found, such as the presence of synthetic products, plastics, petroleum products, flammable volatiles of numerous kinds, and huge, complex machines of high value.

Fortunately, extinguishing agents have been developed to handle each new hazard as it was created. Though water still is the basic extinguishing agent, other agents of comparatively recent de-

Photo courtesy Linden, N. J., Fire Dept.

High pressure water fog truck carries high pressure pump, high pressure hose and tank of water.



The first "smoke exhauster," built by Pirsch, staged its first performance at a water works tunnel fire in Chicago.

velopment contribute to a major degree in handling fires involving specialized hazards.

For example, to meet the hazards brought about by the widespread use of petroleum and petroleum products, effective fire extinguishing agents were developed as previously related.

Certain flammable liquids, however, pose difficult control problems. Alcohol in quantity, when afire, is not susceptible to extinguishment by ordinary foam application, such as are petroleum fires. Hence a special type of foam, which would not be broken down by contact with alcohol, was developed.

Acetone is somewhat similar to alcohol in that it is mixable with water. Water can be used with good effect in the form of spray as a fire extinguishing medium. Carbon dioxide and dry powder may also be employed effectively on fires of these types. Carbon disulphide, lacquers and thinners, all present similar difficulties, but fortunately fires involving them can be controlled by modern agents.

Butadiene, a World War II product, was developed for use in the production of synthetic rubber. Because it boils at a temperature lower than the freezing point of water, it represents a very severe fire hazard. If water at the temperature commonly encountered in water mains is applied to containers in which butadiene is afire, this water will speed up the rate of vaporization of the liquid. While there are extinguishing agents available which will control this type of fire, there is a question of the wisdom of extinguishing the butadiene fire. Should the fire be extinguished, the combustible gas will be thrown off at such a high rate that it may build up an explosive atmosphere over a large area and result in a disastrous explosion.

Inside Operations on Fires

As indicated previously, fire departments today carry on a considerable part of their fire extinguishing efforts within the structure which is afire. Seventy-five years ago it was necessary to carry this work on principally from the outside of the structure, due to the lack of respiratory protective equipment, absence of ventilation operations, and other factors which characterize modern fire fighting. Much more effective fire fighting can be carried on where the fire fighters proceed right to the seat of the fire, and extinguish it. Today, a very high percentage of all building fires are controlled with little fire and water loss, due to the practice of inside fire fighting.

Some oil fires require large quantities of foam for their extinguishment. Three large oil tanks were involved at this fire in Corpus Christi, Tex., on May 21, 1952. Chemical foam powder containers are shown in foreground. The fire was finally brought under control, but required additional foam chemicals which were rushed in from Houston.

In recent years, proper ventilation has been a major factor in enabling fire fighters to enter a structure and come to grips with the fire. But ventilation has not always been practiced in fire fighting. About the time New York City established its fire college, in 1911, ventilation came to the fore largely through the efforts of the late Assistant Chief Thomas J. Dougherty. He erected at the fire department school a miniature building of some five "stories" in height, and so arranged that what was taking place inside could be observed through wired glass doors. The building was divided into two parts. A fire was started in each part at the same time, and the lid on the top of one section was removed, while the other lid remained in place. This demonstration showed conclusively that ventilation retarded rather than speeded up the fire; and thus ventilation was recognized as a necessary operation in fire fighting. Today ventilation is as much a part of fire fighting as is opening doors and windows for use by the fire fighters.

Demonstrating the effects of ventilating a fire, at the smoke house in New York's Fire Department drill yard.

Today's fire fighters have large volumes of water at high pressure at their command. They have wagon and ladder pipes, deluge sets and other large nozzles which were not available seventy-five years ago. Furthermore, the trend in the use of small diameter hose lines for initial attack backed up by 2½-inch lines, has reduced water damage tremendously and speeded up the work of the fire department.

Where companies are running short-handed, as is common in many cities in this country, the use of small diameter hose makes it possible for a company to stretch in at once, as less men are required for handling the small line than a larger one.

The adoption of booster tanks and booster hose enables the fire department to get a line in immediately upon arrival, and at least hold the fire until additional forces arrive. Today, in many departments, approximately ninety per cent of fires are extinguished with booster or 1½-inch lines.

One factor which has had a major effect on fire fighting operations throughout the country is the formation of mutual set-ups. A proper mutual aid organization gives a small community with one or two pieces of apparatus an apparatus assignment in the event of a large fire that parallels that of the large city. With good highways, fast traveling motor apparatus, radio and, of course, legislation authorizing movement of fire apparatus outside of cities, a small fire department today has a second line of defense which is proving of tremendous value when the large fire is encountered.

One practice in fire fighting, where adequate water supplies are not easily

(Continued on page 680)

The Fireman of Yesterday, Today and Tomorrow

Impressions Gleaned from Reading the 75-Year Records of the Fire Service in FIRE ENGINEERING and Its Predecessors.

Editor's Note: **This all-too-brief review of the fireman and his job, past, present and future, makes no attempt to hark back any further than the three-quarters of a century covered by this publication and its forebears. There were firemen, and fire departments in the early Roman empire. Their story, and that of the early volunteers of our own country, must be told elsewhere. Our own concern begins with the transitory period, following the organization of the first paid departments, the conversion from the "armstrong" technique to the mechanical means of fire extinguishment, up to the present and concluding with an estimate of the future. No one can visualize the fire service of the next 75 years. But one thing is certain: if the rate of progress made during the last 75 years is maintained, anything can happen.**

SEVENTY-FIVE years ago the fire service of America was attempting to get its feet on the ground following the conversion of the fire departments of most of the larger cities from volunteer to paid forces. The fireman himself, like his job, was still in the "first grade" of the "new school of fire protection," ushered in by the introduction of equine-powered apparatus, and the fire alarm telegraph. Over the fire service generally still hung the mantle of "yesterday's ways." There was some inclination on the part of many "professional" fire fighters to turn a deaf ear to suggested improvements in procedures and techniques (we find the issues of 1878 analyzing the advantages of fine water spray over solid streams, and urging other improvements in methods). In the 1870's we find a public only just beginning to recognize the fireman as an entity in the municipal government and we find the fireman himself, speaking of the paid municipal fire fighter, only just becoming conscious of his position, and of the need of better fitting himself and his organization for his job.

The transition from the old hand pumper to the chemical engine and the steam engine, and from hand propulsion to horse propulsion, and the beginning of the era of mechanization of fire apparatus were changes for the better, but they didn't make life easier for the fire fighter, even if they armed him better in his battle against fire.

The situation is somewhat aptly summed up in the February 16, 1878 issue of National Firemen's Journal, forerunner of FIRE ENGINEERING. In an article by "An Old Fireman" we read:

"One of the most encouraging facts to an observer on fire matters is the decided change for the better that has taken place within the past few years in the material, general tone, of the greater part of the fire departments throughout the country.

"Time was when the Firemen did not occupy a very exalted position in the estimation of the community at large, and when the name even of a Fireman, caused the bearer to be looked upon with distrust and his favor to be courted, and himself at the same time despised. . . . The old time Fireman was in some respects a singular being. His attire, combining a certain gorgeousness of shirt and neck-tie, resplendency of badge, and lavish display of boot-tops, combined with the somberness of hat and pantaloons, was well calculated to impress a feeling of awe upon all beholders; while his heartfelt yearning for an alarm, and his reckless haste to obtain "first water" marked him as anything but the staid and solid citizen.

"His soul delighted in the excitement attending a conflagration, and he scented the battle from afar. . . . His officers were chosen, not from the fact of their knowledge of fire matters, but were emphatically the 'best men' physically of his company. The efficiency of a company was rated in direct ratio to its ability to 'lay out' all comers. . . . Drink played a part in all Company and Department affairs, and it is more than hinted that many a Chief owed his election to the fact of his ability to 'set 'em up' for the boys.

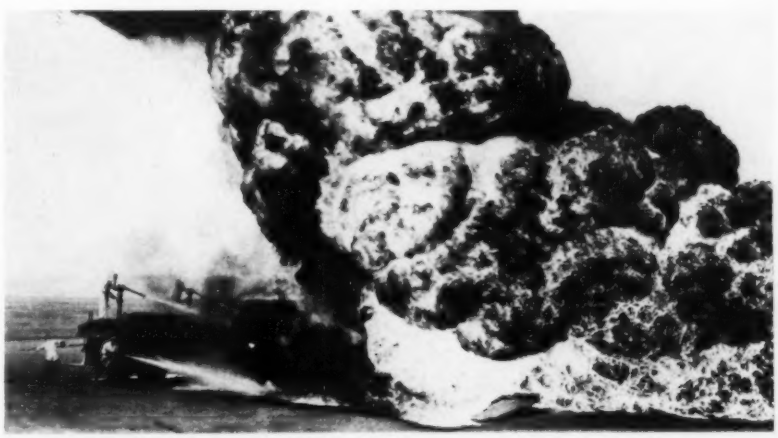
"If there was one thing that the old volunteer absolutely went his length upon, it was his Company Ball. Preparations were made for days and weeks, his particular district was scoured in the sale of tickets which were always purchased, not willingly perhaps, but from the feeling that policy demanded it. . . . That the affair often ended with a slight unpleasantness did not detract from the testivities, but rather afforded that spice of dash and recklessness in which he delighted.

"The old Volunteer was always on hand, and missing a fire would rankle in his breast for years. His apparatus was an object of workship, and . . . being outdone by a rival stung him to the quick. . . . That there were many good qualities in the old Fireman is beyond dispute, and he possessed a certain chivalrous feeling in relation to his business that we now look for in vain.

"The paid Fireman of the present day (1878) is an almost exact contrast. He is a staid, quiet person, who is paid for what he does and therefore does no unnecessary work; is neat to fastidious in his dress, which is as modest in style as its wearer and has a general air of coolness, and self-restraint that is refreshing. The apparatus in his charge is in perfect order, his quarters ditto; and the horses under his charge are trained until their intelligence seems almost human. He is a respecter of law and order, and is beginning to occupy the position in the public esteem to which his calling entitles him.

"He is brave in desperation, and sets about a dangerous task with a certain cautious recklessness that would shame many a soldier on the field of battle. The commands of his officers are as the laws of the Medes and Persians, and he hears but to obey, even at the cost of his life.

"An alarm, instead of (as in the old days) being the signal for general stampede and hurly burly, involving the jamming of apparatus and noses, is considered by him in much the same light as a call to dinner, being a matter of course, creating no excitement and no noise.



New devices have been developed to meet new fire control and rescue demands. Yesterday's firemen fortunately did not have to cope with the airplane hazard. Today's fire fighters are being armed with special apparatus such as this combination water fog and foam crash unit shown attacking a simulated air crash fire. Tomorrow's blaze-beaters will be faced with still more critical air transportation and military problems.

Fire inspectors no longer need be out of service. Fire department short-wave, two-way radio speeds fire prevention inspections as well as fire fighting communications on the fire ground. This fireman's apparatus may be out front, or around the corner, but it is still "in service" by radio and "ready to roll."

"The fighting of a fire has, with him, been reduced to a science, and he proceeds about his work in an appropriate manner. That there is yet room for improvement is not to be doubted, and if ever brought about it will be mainly by the circulation and general perusal by Firemen, of publications devoted to their particular interests, and also by gatherings of representative Firemen from different organizations, to consult and compare notes as to the requirements of their business. . . ."

Today's Firemen

Time and experience have continued to mold and shape the professional fireman—yes, and the volunteer fireman, also. They have progressed a long way from these days the "Old Fireman" wrote about.

Today's professional fireman has shed the pomp and ceremony of tradition, or is rapidly doing so. With him fire fighting and fire suppression is a "job." He may not admit it, but ten-to-one he gets a tremendous kick out of his job. The thrill and excitement, and the danger, get into the blood and once there, the average fireman sticks to his trade.

Today's fireman is well aware of the changes that have taken place, and are occurring in the world in which he lives and works. He has seen one, and possibly two World Wars, and their effect on the fire service. He has seen the growth of, and the shifting population, and of building hazards; he has witnessed the growth of automotive traffic and its attendant hazards. He has beheld the beginning of air transportation, seen airports come to almost every city of any size, with attendant demands for added protection of life and property. And perhaps most important of all, he has been present at the unveiling of what is destined to be the most momentous period in the history of the world, the Atomic Age.

Within the span of the presentday fireman's association with his job, he has, whether he knows it or not, witnessed greater progress in the science and business of fire protection and fire prevention than has occurred in any other generation in history. His own job has been made more secure; more inviting through better working and living conditions. His future, after he retires as a fireman, has likewise been better provided for. His duties, though fully as arduous and dangerous as those of his predecessors, are being made easier by the introduction of new and better tools of his trade—better apparatus and equipment, all along the line. Likewise, he is being better fitted to meet the new, added responsibilities which this Chemical Era and tomorrow's Atomic Age are already imposing upon the fire service.

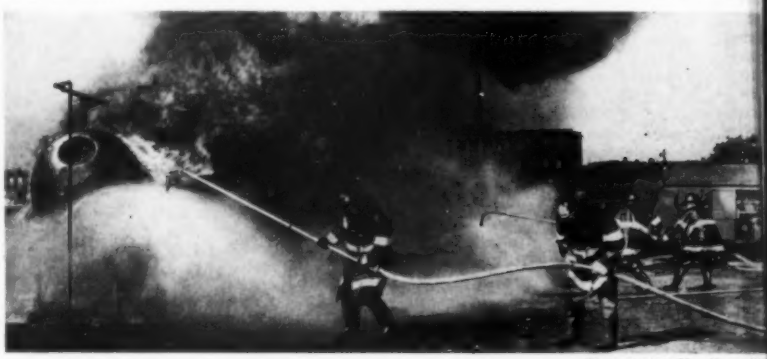


Photo courtesy New Haven F.D.

Training-by-doing will be the rule tomorrow. The Navy's fire fighter schools gave impetus to training-by-doing during World War II. Among municipal fire departments which have adopted this training procedure is the New Haven Fire Department, Chief Paul P. Heine, whose fire fighters are shown here attacking a hot tanker fire at the department's training grounds.

Today's fire fighter has at his command communications facilities as never before, to help detect fire, notify him of the fire, alert his fellow-firemen; help him to attack it and conquer it with least loss of time and waste motion, than ever before in fire service history. He has the advantages of electronic eyes, of "sealed beam," and of rate-of-heat-rise fire detection devices. He has seen short wave radio communication facilities, considered probably one of the most valuable aids tofire suppression ever devised adapted to his use.

He has watched continued improvement in fire control equipment: more powerful, streamlined apparatus; special equipment for coping with special types of fires, such as in aircrash and industrial hazards. He has seen revision, or at least attempted revision, of the laws governing building and of storage and transportation, to eliminate life and property hazards. And he has witnessed a new approach to the problem of educating and training the fire fighter to better do his duty.

It is true that notwithstanding the improved status of the modern fireman, fires are continuing to increase, along with fire losses to life and property. Much of the reason of course for the highest losses in the history of the nation are due to the current inflationary value of the dollar. Nevertheless, the nation is, on the whole, having more fires, more serious fires, more fires of conflagration possibilities, all of which means more work for today's firemen.

(*Continued on page* 684)

Photo courtesy Homelite Corp.

Modern hazards call for modern attack methods and equipment. Basement and sub-basement fires took lives of many fire fighters before modern respiratory and smoke removal equipment were devised. Here dangerous fumes from a cellar fire which made attack without gas masks impossible, are being drawn off by a smoke extractor.

Communications a Major Factor in Fire Attack and Control

Brief Review of Progress Made in the Last 75 Years —and a Peep Into the Communications Future

By ROI B. WOOLLEY

Editor's Note: **Four years ago (October, 1948, issue of FIRE ENGINEERING), the author of this review presented a critical study of fire service communications in which he questioned whether improved communications facilities were being adopted by the fire services as were other modern fire control improvements. The evidence at that time indicated there was much room for advancement.**

The author made no attempt to draw comparisons between fire service communications facilities of, say, the 1880's and the Gay Nineties, with those of today, but he did point out the increasingly heavy responsibilities placed upon communications as the number and seriousness of the nation's fires continued to increase.

In keeping with the editorial theme of this special August Anniversary issue, it seems fitting that the same author should briefly review the entire field of fire service communications from the viewpoint of progress made during the 75-year history of this Journal, and as they may relate to the fire control and extinguishment problems that lie ahead.

It is hoped this review will, if nothing else, encourage those enterprising heads of the nation's fire forces to again survey and overhaul their own individual communications assets and liabilities and, where found wanting, to take necessary steps to bring their communications up-to-date, and ready to meet the demands that are certain to develop in the years ahead.

THERE are four major periods in the life history of every fire. They may be divided thus: (1) The time when the fire is discovered; (2) the period of notifying the fire department of the fire; (3) the period of response by the fire force and (4) the period of extinguishing the fire.

Every fire, big or little, runs much this same cycle—the time period from its inception and discovery (they are not always simultaneous), to the time when firemen are alerted, respond and put out the fire.

Next to preventing the fire itself, about the most important factor in the business of fire control is early discovery of the fire and prompt notification of the fire forces.

We hear a great deal about the "delayed alarm." It is true that some alarms are delayed in transmission, but what the average person, including fireman, means when he talks about "delayed alarm" is "delayed discovery" of the fire. True, when a watchman, or a plant worker or a housewife delays notifying the fire department about a fire for whatever reason and no matter how severe the fire, it is unquestionably a delayed alarm. Whenever telephone party line users hog a telephone so that the line cannot be used to summon firemen, that is another form of delayed alarm. But regardless of tardiness in attempting to call the fire fighters, the question arises: how much of a delay was there in the *discovery* of the fire? Why wasn't the fire found *sooner?* Any study of fire service communications—past, present or future, therefore—may well begin with this question of fire discovery.

It may be asked, what have communications got to do with *discovery* of fire? The answer is a great deal today, and they will have even more to do with it tomorrow.

Communications can be so linked with *discovery* that fire can be made to signal its own origination, its start. They can go further, as we shall see later, and not only announce fire's propagation, but it can activate the mechanism that will sign fire's death warrant, while alerting the fire extinguishing forces. The fire service got a great assist with the introduction of the first automatic sprinkler, and waterflow alarm; it received an equally vital boost with the advent of the electronic and the photoelectric "eye."

Unfortunately, these mechanical means of quick discovery and notification of fire have thus far been limited to certain selected occupancies. It may safely be said, however, that through the broadening of supervisory central station service, and the introduction and growing application of detection systems of moderate cost, mechanical automatic fire detection is becoming more of an actuality every day. In this respect, fire protection and signal engineers have kept abreast of the swelling tide of fire hazards which are party to this chemical and atomic era, with scientific mechanisms that would put Jules Verne to shame. It is only a matter of time when every important business, industrial and multiple dwelling occupancy will enjoy this priceless safeguard.

Can Fire Notification Be Speeded?

Although radical innovations have occurred in fire detection and alarm transmission and in other aspects of fire service communications, progress has been slower in improving the means and methods of calling fire fighters to the fire. Many believe it is not so much a matter of improvement of existing systems, as it is of extending these systems into the vast areas where they do not now exist.

As practically every fireman knows, there are today, and have been for many years, two main instruments for notifiy-

Photo courtesy Detroit Police & Fire Arson Squad

Radio control console at Detroit Fire Alarm headquarters. The Detroit Fire Department is 100% radio-equipped. Here's the heart of the system at the central communication office, Hastings and Macomb Streets, with Dispatcher Maurice Roche broadcasting.

ing the fire department of a fire or other emergency. These are the fire alarm telegraph system and the telephone. Tomorrow, another highly revolutionary method may emerge from the blueprint stage: that is the radio fire alarm notification system. At present, however, the nation relies upon wire as the chief carrier facility for its fire notifications.

Photo courtesy Chicago Fire Department

Fire Commissioner Corrigan and Lieutenant Myers of the Chicago Fire Department, trying out the first "walkie talkie" developed for that department back in 1943.

Seventy-five years ago, with the advent of what is now *Fire Engineering*, the fire alarm telegraph was already in being. It was called even then the most revolutionary development since the inauguration of the paid fire department.

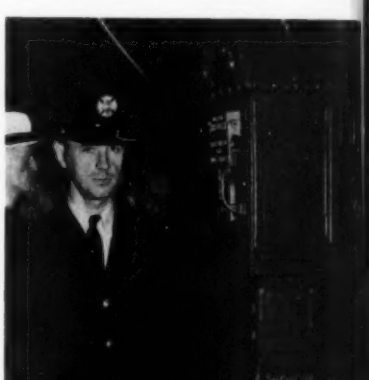
New York City was the first community to attempt to provide the means for announcing by some mechanical and systematic method the locations of fires. The idea was indirectly the outcome of Samuel Morse's development of the telegraph in the early 1840's. Along about that time there were demands in New York City and elsewhere for improvments in the alarm system then in vogue for alerting firemen. A special council committee in New York had reported that *"if the person who had charge of the public bell on the City Hall had struck it as was his duty, the fire (history doesn't say which) would have done very little damage. . ."*

In 1847, Chief Engineer Anderson of the New York Fire Department recommended the use of a fire alarm telegraph, and the Council authorized Hugh Downing and Royal E. House *"to construct a line of telegraph by setting posts in the ground"* from Fort Washington to several of the bell towers with which the city was beginning to be equipped. Downing was awarded $500 for the contract. At that time the city was divided into fire districts. A watch tower and bell was provided for each district, and a watchman equipped with telescope was continually on duty (or supposed to be) in each tower. Each district was numbered so that when these numbers were sounded on the tower bells, the volunteer firemen and the general public as well were informed of the section of the city in which the fire existed. This manual operation was a slow, tedious procedure. When a watchman discovered a fire in his district he would strike the district number manually and this would be heard by the watchman on the next tower, who would repeat or relay the signal. If the watchman was uncertain of the location of the fire, it was said he would give the watchman on the next tower a few taps of his telegraph key. The towers were connected by telegraph lines. At night many a fire remained undiscovered until it had announced itself by burning through the roof.

The earliest suggestion of the application of the telegraph to fire alarm signaling actually took place before Chief Anderson's recommendation. This was in Boston. A William F. Channing wrote an article in the "Boston Advertiser" in 1845 which described his method of transmitting to the watch towers, coded signals from distinctively numbered street stations (sort of phantom boxes?) and automatically striking these signals on the tower bells by means of electro-mechanical bell strikers.

The first practical fire alarm system was the outcome, the installation being made in Boston in 1851, and Moses G. Farmer, who had allied himself with Mr. Channing, became the first fire alarm superintendent in that city. The first actual fire alarm was transmitted over the new system in 1852. Three years later, in 1855, John N. Gamewell of South Carolina became convinced of the possibilities inherent in Boston's first experimental alarm system and purchased from Channing and Farmer the rights to use their inventions in southern states. Four years later he purchased all their patents and actual manufacturing was begun in 1866, immediately after the close of the Civil War, about the time the volunteers began to give way to the paid fire fighters in the big cities.

From that time on continual improvements were made in the fire alarm telegraph, chief of which was the application or the non-interfering principle; the principle of succession which provided for the consecutive transmission of such alarms; and the automatic grounding feature which provided for correct reception of alarms on either side of



A chief's aide stands by at "spade handle box" at a multiple alarm fire in New York. The modern street fire alarm box permits wireless communications between fire ground and fire headquarters, if desired.

broken or otherwise disabled circuits. Other improvements included automatic reception, announcement and recording with the exact date and time at the central station, automatic re-transmission of alarms at fire stations, including visual and audible announcements to the fire fighting forces. Still later (about 1883) came "auxiliary" fire alarm systems which reached their peak more recently with the inclusion of the automatic fire detection feature of some fire alarm systems.

About the time this Journal found being, the custom of ringing fire bells throughout the duration of a fire was discontinued. About that time, also, volunteer firemen in the larger cities had been succeeded by paid forces continuously on duty at the fire houses and signals were passed to all fire companies by telegraph. With the introduction of fire alarm boxes on the streets, the fire towers joined the ranks of other curios and gradually disappeared. Only one, that on Mount Morris, New York City, remains today a monument to that interesting past.

Today, short of increasing the number of fire alarm signal boxes on streets and in occupancies that require special protection, it is being found almost impossible to further shave seconds from the time consumed in receiving alarms of fire at the fire alarm headquarters, and

Photo courtesy R. K. O. Pathe

New York has world's busiest fire alarm centers. Here is the Manhattan Fire Alarm Central Station, tucked away in a remote Central Park area, which handles all fire department communications traffic for the Borough of Manhattan. All other New York boroughs have their own fire alarm offices. All are now connected by radio as well as wire.

District of Columbia has one of the Nation's finest "plants." Located at McDougal Park, this fire alarm headquarters has received much favorable publicity. Washington is fully radio equipped. In addition, vocal alarm system is used to notify companies. Recorders take down all important messages. Bells are used for confirmation.

relaying them to the fire forces. Within fire alarm bureaus (we predict that tomorrow will see the dropping of the name "telegraph"), continual reforms are still being attempted, however, to shorten the time of alarm transmission, and to improve dependability and accuracy. This is particularly true in the handling of telephone alarms which constitute the greatest percentage of calls received for fire or other emergencies.

Two notable improvements have been made within the last decade in this field. They are the introduction of the public address system (both radio and "wired radio") and the recording device. The latter now automatically records all messages received and given out at fire alarm headquarters, and the former permits of faster, more accurate transmission of alarms from headquarters to fire stations and other locations which should receive such messages. The "PA" system also permits mass promulgation of general information and instructions from the fire department to all fire fighters in their quarters. The wired bell system, however, is still retained generally, even where the "squawk box" is now in vogue, for its advantages as a double-check, and its recording features.

Communications Hasten Response

As pointed out in the foregoing, improved communications which speed the dispatching of alarm naturally hasten the dispatch of the fire forces to the scene of action. Thus the third period in the time cycle of every fire or emergency is shortened. Not only is response speeded, but through modern communications facilities, the responding forces are better prepared to reach their objectives and, once there, to get to work with greatest efficiency and safety.

Today's municipal firemen leave their quarters in answer to most calls knowing pretty much what they are going up against, thanks to the vocal or "voice" systems we have described. It is not inconceivable that tomorrow they will not only know just what their mission is from the verbal message given them, but they will actually *see* that mission itself depicted on some electronic scope, or other device on their apparatus.

Already, via television, some municipal fire fighters in their quarters are able to sit back and observe the operations of their fellow firemen in extinguishing a fire or operating at some other emergency. Mobile television sets are presently available for small vehicles. It requires no figment of the imagination to visualize the officer of a responding fire unit being able to see the location for which the unit is headed, and even the face of the officer or dispatcher issuing the instructions and commands to the responding company. In short, a commanding officer at the scene of any incident in the not too remote future will be able to not only talk with responding forces but will be able to see them and their actions, just as they will be able to see and hear him. Fantastic? So would have been television to the fireman of yesteryear.

At least one side of this picture is a reality today: that is two-way voice communication between fire department headquarters and individual units responding to alarms, or at work on the fire ground. No longer need a fire company be "lost" to fire H.Q. after it leaves its individual quarters. Short-wave radio has corrected that old and serious weakness.

But modern communications facilities can accelerate response in other ways. Already the electronic eye and photo-electric cell, such as detect fire, can be used to clear the way for fire apparatus and to make faster and safer response, through traffic congested thoroughfares. Already, as mentioned in last month's *Fire Engineering's* story about the New Haven Fire Department Training Ground exhibition, electronics will automatically set, or re-set, traffic signals at street intersections in favor of responding apparatus, merely by the reflection of a fire apparatus' warning signals, picked up by an electronic device which, in turn, activates the traffic lights.

Communications also can tell the traffic officer, as well as drivers of vehicles in the path of the responding fire forces, about the routes the latter are taking, and their progress. Thus, improved communications, coupled with modern audible and visible warning signal devices, will help to shorten the traveling time between headquarters of the fire forces, and the scene of the emergency.

Fire Attack Is Furthered by Modern Communications

In the early days of this Journal, and of the municipal fire service, communications on the fire ground were limited to the speaking trumpet and the lung power of the officer-in-command. About the only requirement for volunteer officer, in those days, was the ability to "bawl like a bull."

As the height of buildings increased, and as attack strategy often necessitated locating fire units at large fires over wide areas, the problem of maintaining liaison between all fire control forces became increasingly difficult. Not only property, but lives were lost through inability of fire officers to get their orders to their field forces.

Attempts to employ portable telephones were unavailing and it remained for radio to provide the best answer to the problem. A number of leading fire officials urged the adaptation of radio as a possible solution for this problem, once the Army Signal Corps had demonstrated the effectiveness of short-wave walkie talkies.

As far back as 1934, after the Chicago Stock Yards conflagration (May 19, 1934), where fire raged over one-half

(*Continued on page* 686)

Photo courtesy Detroit Police & Fire Arson Squad

Detroit units are never out of touch with headquarters. Photo shows enclosed-type ladder truck with officer transmitting a message. The transmitter and receiver are installed in the cab.

Rescue and First Aid Service Continues Steady Advance

Improvement Noted in Personnel, Equipment and Training Particularly in Volunteer Field

A SPECIAL REPORT

Editor's Note: Two years ago FIRE ENGINEERING conducted a survey among fire departments representing various geographical and population classifications of the nation. The findings of this study, published in the August, 1950, Issue of this Journal, constituted the first comprehensive analysis of the rescue and emergency service, as related to the fire forces.

Notwithstanding its scope, that study as published, of necessity omitted a number of factors about which many readers of this Journal have since made inquiry. A number of correspondents pointed out that this earlier information, concerning the equipping and operating of rescue and first aid squads as units of municipal fire departments, lacked certain requisite data that might assist other fire departments, in particular volunteer organizations in the smaller towns and villages and rural areas, to organize, finance and maintain such services, with credit to the departments, and to the communities served. Also, since that first study, considerable progress has been made in the rescue and first aid emergency fields, notably in the apparatus and equipment, and in the training of rescue and first aid personnel. County and State rescue and first aid organizations are on the increase, which augurs well for the future of this service as an essential component of the modern fire department.

In view of these developments, and to meet the requests of those interested readers, we have made a further and supplemental study of this subject, which forms the basis for the accompanying Special Report.

In presenting this Report we desire to acknowledge the assistance given the editors by the many fire departments throughout the nation, and in particular, the heads of many individual rescue and first aid units, large and small. Unfortunately, the list of contributors is too lengthy to be included in full herein. However, because of the nature of their assistance, grateful acknowledgement is made to Dr. Herbert J. Stack, New York University, Vice-president of the International Rescue and First Aid Association; to certain members of the New Jersey State First Aid Council; to Captain Robert W. Boggs of Rockville Centre Emergency and Rescue Floodlight Co. No. 1, and to a prominent officer heading one of the rescue units of one of the nation's largest fire departments, who of necessity must remain nameless—but who will recognize certain of his contributions in the following. Appreciation is also extended to the manufacturers of apparatus and equipment who generously provided pictures and data, much of which cannot be included herein because of publishing limitations.

AN interesting complement to the fire, police and health services of American communities has been developing progressively during the past few decades, throughout most of the nation. It is known by different names in different areas, but generally referred to as the Rescue and First Aid Service.

Actually, its development has been along two branches, the first being in the field of rescue companies operated by municipal fire departments, and the second, which is today making the more spectacular progress and is the subject of this study, is the volunteer rescue and first aid service. A third branch, not within the scope of this text, might be found in the city-wide emergency ambulance service operated by a few of the large fire departments.

Origin of Rescue Company

However, the municipal type rescue squad is believed to have had its origin in 1915, when the then Chief of the New York Fire Department, John Kenlon, organized Rescue Company 1 and equipped it with picked men and equipment. This unit was formed to meet the special emergencies which the department was being called upon to face in ever-increasing degree with the advances in chemical technology and its attendant hazards, the advent of large refrigeration plants, the increase in the number and severity of railroad, tunnel, aircraft and highway accidents, and the increase in the area and bulk of modern buildings. The specialized and limited nature of the work of this unit is reflected even today in the 575 runs of Rescue Co. No. 1 compared with the 2,000 runs of engine and ladder companies in some congested tenement areas of the city.

The success of this squad was apparent from the start, being partly due to the urgent need for such facilities, but in greater measure, due to the care in the selection and training of the personnel assigned to the unit (the first Captain of this company was the late John J. McElligott who subsequently became Chief of Department).

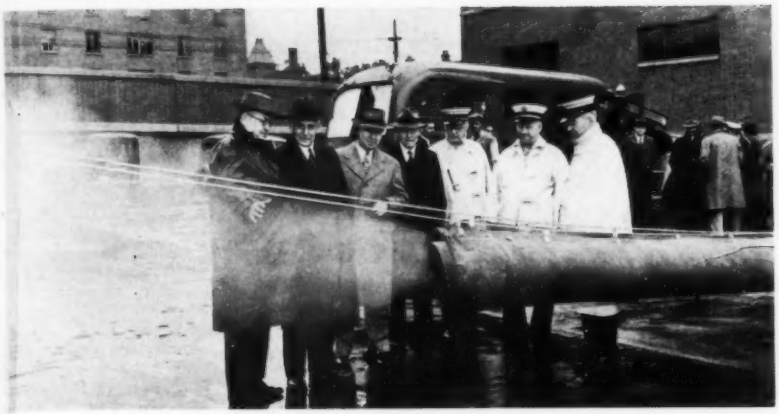
As other cities such as Chicago, Philadelphia, Boston and Washington added rescue companies to their fire departments, the functions and the operation of the units were increased in scope. In some cities the functions were combined with other specialized duties, the squads becoming combination salvage and rescue companies. In other places they served as a manpower pool for operation at large fires and emergencies. In still other towns, the rescue unit was called upon to perform the functions of an ambulance squad as well, a custom widely found in volunteer squads today. A few cities and towns combined certain fire fighting duties with rescue and first aid operations.

A notable example of this is Chicago, where its 13 rescue squads frequently are employed to fight fire with deck pipes with which they are equipped.

The extent of the rescue squad movement is indicated also by New York's five fire department rescue companies,

Photo courtesy Approved Fire Equipment Corp.

One of the earliest of the small towns to boast a real rescue unit was Closter, N. J., which over twenty years ago operated this compartmentized apparatus. As can be observed, weather protection was sketchy, as was working room for crew and patients.



The Lamb Air Mover as a smoke ejector. Former Captain Edward Lamb of the San Francisco Fire Department, inventor of the Lamb Air Mover used on the Airmatic Task Unit of the Cincinnati Fire Department, demonstrates his smoke remover before Cincinnati Fire Chief Barney Houston and other officials.

and the 20 additional emergency squads of the New York Police Department. Los Angeles now has six rescue companies in service, strategically located to serve the 453 square miles comprising that city. In addition, two line companies have been equipped with resuscitators for emergency use until arrival of the regular rescue units. Philadelphia maintains three fully equipped rescue companies, and most other large cities have more than one of such units.

One of the most unusual rescue developments is the Cincinnati Fire Department Airmatic Task Unit. This was created by former Captain Edward Lamb of the San Francisco Fire Department at the prompting of former Chief Charles Brennan of that city after the fatal Chicago tunnel fire of 1933. Captain Lamb began experimenting with smoke ejectors and eventually designed one known as the Lamb air mover which inspired the creative-minded captain to develop further his idea of a self-contained, mobile piece of equipment, carrying a compressor and various types of pneumatic tools and air-using devices.

The Airmatic Task Unit originally cost $20,000 and had an I-R 350 cfm compressor and eventually a complete assortment of air-operated tools, including jackhammer rock drill, pavement breakers, clay digger, circular saws, etc. In addition, the unit provides air for several hose-equipped face masks permitting operations in smoky, toxic areas, and where there is oxygen deficiency.

In addition to the airmatic tools and equipment, the unit also carries a wide assortment of tools, equipment and supplies essential for rescue and first aid operations.

Since its installation in 1943, the Cincinnati Fire Department reports the Air Compressor Squad Wagon (another name for the Task Unit) has made 263 runs and on 130 of them has used the air mover or pneumatic tools, including use of air helmets for recovery of drowned persons. The unit responds to large multiple alarm fires and on special call.

Generally, the rescue units found in the larger cities are what civilian defense authorities designate as "Special and Heavy Duty Rescue Squads," the vehicles being large and heavy, and the equipment carried being suitable for large scale operations such as train and bus wrecks, building and elevator collapses, cave-ins, and similar rescue problems. An indication of the type of these units now in service may be had from the accompanying illustrations, and from the lists of fundamental equipment carried and operational tasks published in the August, 1950, issue of FIRE ENGINEERING.

Of late years, with the development of organized mutual aid between fire forces, some county and area rescue or disaster units have been introduced. Perhaps the near-ultimate in this respect is the "Jay W. Stevens Disaster Service Unit," mainfained and operated by the Portland, Ore., Fire Department. This remarkable unit, named after one of the nation's most progressive and respected fire protection authorities, was designed and equipped to carry every tool and device which experience has shown to be useful for operating efficiently at disasters and major emergencies.

At the other end of the rescue scale are found small vehicles that could be carried aboard the Portland unit, ranging all the way from automobile sedans and station wagons, to small panel, stake and dump trucks. Not to be overlooked also, are the elaborately equipped ambulances. In between are found the great average, the type of unit which is large enough to carry most of the required mechanical and other facilities, with sufficient room to accommodate a number of litter and walking casualties; powered to negotiate the toughest roads and grades, and to operate the mechanized tools, first aid and rescue equipment.

First Aid and Light Rescue Squads

The second branch of rescue service development might be termed the "First Aid and Light Rescue Squad." Most of the volunteer rescue and first aid squads are in this category.

In the 1920's, along the New Jersey shore at Ocean Grove, Belmar and Neptune City, there came into being the forerunners of the volunteer rescue and first aid movement as we know it today. Prior to 1920, at most seashore resorts in this country and abroad, notably in the Scandinavian countries, there had long been some form of life saving crews. While their activities were mainly confined to aquatic emergencies and beach accidents, they became the natural forerunners of our present rescue, ambulance and first aid services. Further impetus to the movement was given by a number of large public utilities, which had organized safety and first aid groups for the protection of their employes.

Belmar, N. J., organized its rescue squad on January 15, 1928. It was presumably patterned after a private set-up of the Jersey Central Power & Light Company, which had always courteously responded to outside calls for help. An employe of the company, Charles Measure, was one of the founders of the Belmar squad, and when the New Jersey State First Aid Council was formed at Belmar, August 19, 1928, he became its first president.

The movement spread along the coasts and inland, spark-plugged by enthusiasts both within and outside the volunteer fire departments. As with the beginning of the paid rescue forces, the volunteer arrangements followed no particular pattern, depending upon a num-

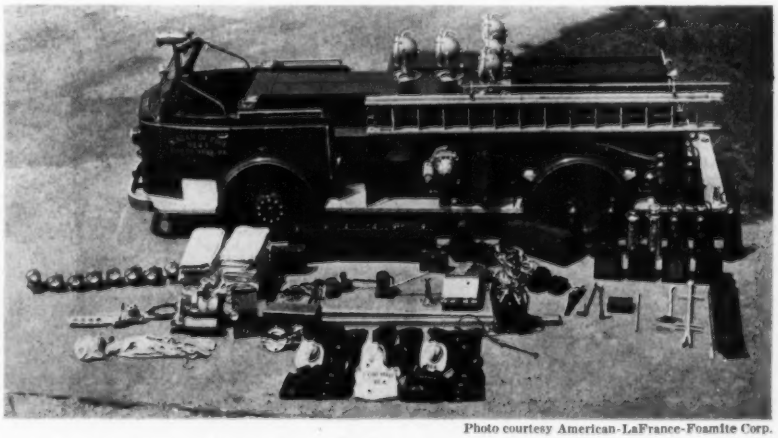


Photo courtesy American-LaFrance-Foamite Corp.

The York, Pa., rescue unit packs plenty of punch and equipment. Recently delivered rescue truck (Rex 1) has compartment space for most basic rescue and first aid equipment. York preferred the open to the enclosed cab type. Note the range of equipment.

ber of factors, such as legal and financial limitations, public support, and so on. In some districts it was found expedient to organize and operate the service independently, and apart from, the local fire department. In others, although nominally a part of, and under the jurisdiction of, the fire department, the rescue and first aid units served areas not covered by the department's fire fighting forces. But whatever the organization and operating arrangement, the movement continued to grow.

The New Jersey State First Aid Council became the backbone of the rescue squad movement in that state, and it since has attained a national reputation in its field of rescue, first aid and disaster planning. Other states which have adopted state-wide cooperation among their squads, are Virginia, Pennsylvania, Maryland and Rhode Island. On the West Coast, California has had a long history of intensive squad activity and cooperation.

International Rescue and First Aid Association Formed

Another far-reaching step was taken in the rescue squad movement in September, 1948, at Atlantic City. This was the formation of the International Rescue and First Aid Association, a move to unite all squads and first aid associations everywhere into one comprehensive organization. Although in existence only four years, this organization has received recognition by government bureaus and private agencies in the field of safety. The N.J. S.F.A.C., in cooperation with the International, publishes the "Gold Cross Magazine" a small monthly journal devoted to the activities of these associations. It is edited by Ivan Hill, a member of the Fanwood, N. J., squad.

Photo courtesy Rockville Centre Emergency & Rescue

The first "Emergency and Floodlight" of the Rockville Centre, L. I., Fire Department, vintage 1940, alongside the recently installed streamlined unit in front of the department's attractive fire house. New truck is known as "Emergency and Rescue Floodlight Co. No. 1." Its captain is R. W. Boggs.

New Jersey Alone in Providing State-Wide Service?

Most authorities regard New Jersey as probably alone today among the states in providing free state-wide ambulance and first aid service, to all its residents, with over 375 squads. The N.J.S.F.A.C. has an enrollment of 164 volunteer squads with over 5,000 trained members, divided into 9 districts. There is a mobilization chairman for each district, and a state mobilization chairman, to coordinate the assignments and activities of squads at disasters and emergencies.

Another function of the mobilization chairman is to conduct mobilization drills to keep the squads alert, and to develop a smooth, well disciplined rescue organization, to be of maximum value to the community in time of disaster. An inventory of all the equipment possessed by the 164 squads of the N.J.S.F.A.C. is under way to facilitate locating and delivering any specialized equipment needed, day or night, to a desired objective.

The average squad in New Jersey responds to about 300 calls a year, involving 1,500 man-hours of work, and 6,000 miles of travel. Some individual squads naturally far exceed this average.

Rescue and first aid services are performing yeoman's duty in other states. The Bucks County, Pennsylvania, Squad, with three ambulances, one rescue truck and one mobile unit, answered 1,400 calls in 1951 and travelled over 50,000 miles. It is interesting to note that this squad completed 15,000 calls in 20 years for a total mileage of 535,000 miles, and in so doing wore out 12 ambulances. It has its own 60 watt radio transmitter in its squad headquarters, with two-way mobile sets on its vehicles, and walkie-talkie sets for use at accidents and disasters.

Among the numerous other Pennsylvania cities well equipped with rescue and first aid services is Lewiston, site of the Pennsylvania Fire College, where the Fame Company's ambulance, and Brooklyn Company's Rescue Unit, the

Photo courtesy Rockville Centre Emergency & Rescue

Interior of newly commissioned unit of the Rockville Centre Fire Department showing officer (Captain Boggs) on folding seat at control desk opposite dispensary counter and sink. Truck has running water, fans, drop seat and facilities for treating a number of patients at same time. Flood lights sink into compartments over control desk. Seats for driver and officer are in cab behind.

latter having one of the most active, competent women's auxiliary, provide an outstanding service to both the local fire department, under Chief Nelson Yearick, and to the citizens of the city.

Virginia, too, has its outstanding squads and crews, as has Maryland. The widely known Roanoke, Va., Life Saving and First Aid Crew answers over 500 calls yearly with its squad car and emergency truck. Its equipment includes two boat trailers, six iron lungs, nine oxygen tents and 236 separate items of emergency equipment. It has three full-time telephone operators, paid by the City of Roanoke, Va. The captain of the squad, Julian S. Wise, is an internationally known authority on first aid and resuscitation methods, and as early as 1927 had correspondence with Lt. Col. Holger Nielsen of Copenhagen, Denmark, concerning the latter's resuscitation method which was recently adopted throughout this country. Mr. Wise is also president of the International Rescue and First Aid Association.

Within a radius of seven miles of Roanoke are seven volunteer rescue squads, including the William Hunton Rescue Squad, which is probably the first squad with all-colored membership.

To residents of suburban Washington, D. C., no introduction is needed to the Bethesda-Chevy Chase Rescue Squad and its indefatigable director, Don. Huntington. Formed by returning servicemen in 1945, it has achieved national prominence for the breadth and calibre of its rescue activities. It is one of the best equipped squads in the country and answers over 1,850 calls yearly.

Rescue Apparatus and Equipment Shows Improvement

Rescue and first aid vehicles are of two general types, not including ambulances, which are not customarily classified as rescue apparatus. The tendency indicated in FIRE ENGINEERING'S 1950 Report, to the effect that a number of municipalities are installing smaller, lighter, more maneuverable and less costly emergency units, without relinquishing the larger, more costly vehicles, is again confirmed. Although no radical departures are noted, the thinking on the part of some chief officers is to increase the number of rescue units by the addition of lighter, faster and less costly squad cars, some of them little removed from standard pleasure cars. In fact, some departments are equipping the cars of battalion and other chiefs with basic rescue and first aid equipment, including two-way radio, on the theory that such units can get to the scene of the average emergency more quickly, operate at less cost, and with fewer men, and thereby justify the cost of the larger number of rigs. Also, they reason, this type unit assembles an additional reserve of first aid and minor rescue equipment at the fire, or other incident, ready for use if it is required making it unnecessary to special call the larger units.

Although there have been no fundamental changes in the basic rescue and first aid equipment carried by present-day apparatus, there have been continual refinements and improvements in the facilities themselves. This is particularly true in the field of respiratory protective devices. Furthermore, the list of these facilities added to rescue and first aid rigs, continues to grow.

It is natural that some squads should specialize in certain equipment particularly suited to the emergencies they must cope with. Many squads serving communities on waterways or lakes, in addition to boats of all types, have developed special apparatus for body recovery, for diving and underwater operations. Along the Atlantic Coast, where boats are requisite for squads, a number have glass bottom type craft, outboard motors, water scopes, as well as diving and grappling gear. A number of them, like the Lakewood, N. J., Rescue and First Aid crew, have elaborately equipped speed boats to enable them to travel over a large body of water.

The Omaha, Neb., Fire Department Rescue Squad, with approval of the County medical society and after extensive training, carries among its equipment laryngoscopes, for locating and removing foreign matter that may lodge in the throats of patients.

Marking the addition of materiel heretofore not included as regular rescue and first aid equipment, are oxygen tents, iron lungs, large portable power plants. The Johnson City, Tenn., Emergency and First Aid Squad, for example, considers all the regular equipment.

Some authorities may reason that addition of such materiel is purely a matter of local preference. This may be true, but so too not long ago was the decision to add oxygen and air respiratory protective devices. It is entirely conceivable that tomorrow's rescue and emergency forces will catalog not only such essential appurtenances, but other devices, not yet in the blueprint stage.

Increasing Scope of Squads Calls for Intensive Training

The late Fire Chief John Kenlon of New York established the first municipal rescue unit to cope with rescue and first aid problems introduced by the nation's introduction of refrigeration, industrial mechanization, etc. As the pace of progress accelerated, all municipal rescue units have had to add more and more component equipment. This naturally has affected the design and

(*Continued on page 720*)

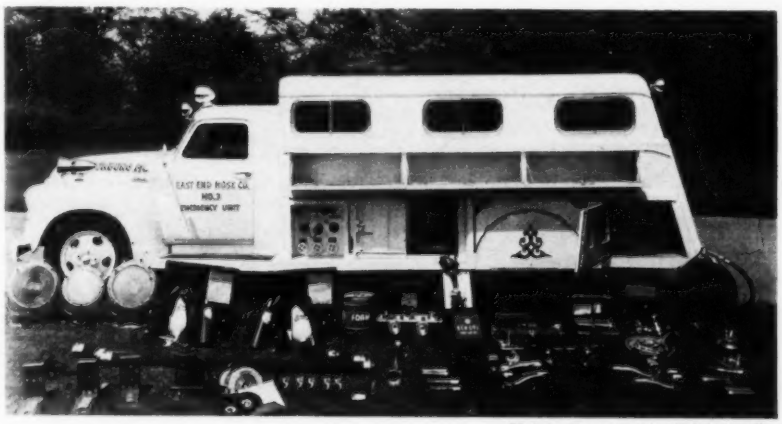


Photo by Sharpsville Steel Fabricators, Inc.

The East End Hose Company's Emergency Unit of the Johnsonburg, Pa., Fire Department can fight fire as well as perform rescue and first aid work (a combination desired by many community fire companies). Interior has ample work room, light and conveniences for crew and patients.

Photo courtesy Milwaukee Fire Department

The members of the Milwaukee, Wis., Rescue Company boast that their unit has all the necessary rescue and first aid equipment that any other rescue apparatus has, plus such features as four-wheel drive, and paraphernalia of their own development (such as, for example, an enema set).

Rural Fire Fighting—a Review Past, Present, and Future

How Far Has Rural Fire Protection Progressed in the 75 Years Since FIRE ENGINEERING Came into Being?

By ROI B. WOOLLEY

Editors' Note: Last year in the Convention Issue of Fire Engineering, the author of the accompanying text presented an article entitled "What Can be Done to Improve Rural Fire Attack and Control?" In it Chief Woolley endeavored to relate the principles of modern coordinated fire attack which he previously expounded in this Journal for municipal fire suppression, to the control and extinguishment of farm fires.

That article, together with the series of coordinated attack, and in particular one installment of the series, captioned "Carrying the Water and the Attack to the Fire," were so well received that this year the editors requested him to prepare for our readers a quick review of the entire subject of rural fire protection, beginning from about the time the antecedents of Fire Engineering came into being.

This he has done as best as he could under the limitations imposed by available editorial space. No attempt has been made to detail either the equipment and facilities requisite to modern rural fire suppression, or the methods and techniques employed in this endeavor. Those stories have previously been told in individual articles, and will be told in similar future messages as changes and improvements occur. At best, the author has hoped to bring our readers a better understanding of the problems that be sought the rural fire fighters of yesteryears, and some of those which face them today.

SEVENTY-FIVE years ago, when this Journal came into existence, the nation was still in the "horse-and-buggy" era. Mechanization of the farm had only just begun, with the application of the steam engine to certain farming chores. Farms were naturally fewer, and more isolated. Roads were generally unpaved and unsuited to response of any fire apparatus. They remained so until the coming of the motor car.

Communications facilities for turning in fire alarms were largely non-existent. Even if firemen were available in an area, fire alarms had to be transmitted by mounted riders or other equally slow means, and by the time tired fire fighters reached the scene, if they ever did so, only the chimneys and foundations remained as monuments to those early days of rural fire fighting.

For the most part, farm buildings were built to burn. The spread of fire from one structure to another was accelerated by the ubiquitous wooden shingle. Even where farm buildings were built of brick or masonry, fire was invited to enter by the roof.

Water in quantity was missing on most farms. The wind-mill, which provided power for the farm water works, was missing except on the more prosperous farms. About the only fire preventive measures the farmer took was to invest in a batch of lightning rods. The electrified farm was not even a blueprint. Kerosene, better known as "coal oil" was the common source of illumination. It was also the universal expediter in starting fires for cooking and heating, wood being the predominant fuel. Then, as not too infrequently happens today, this deadly mixture dealt out death promiscuously.

Wooded farm lands were vastly greater in those days, and forest fires were a very real menace, aided and abetted by the railroad's "iron horse."

Farmers had few ideas about how to prevent fires, and fewer on how to extinguish them, once started. They expected to lose the dwelling, barn, outbuilding, or other structure in which fire originated, and if the entire group of farm buildings didn't go up in smoke there was rejoicing.

All-in-all those were pretty rugged days for the farmer and the very few firemen who made any effort at rural fire control.

The situation of the time is indicated somewhat by an item in an early 1877 issue of the *National Firemen's Journal*, progenitor of FIRE ENGINEERING. It said: "Steam threshing is extending among farmers, and stacks for grain and contiguous barns, and other buildings have been fired thereby. Some insurance companies add 15% to the rates of insurance where steam threshers are used, or prohibit their use entirely."

In these early days, town growth was increasing, while rural population remained largely stationary, the result of efforts to mechanize industry, and the increase in railroad and steamboat facilities. Thus, there was very little attempt by farmers to get together and form any sort of fire defense. The concentration of property in urban areas resulted in new and flammable articles such as kerosene and gas. Illuminating gas was finding broader use, and getting in its destructive work, although of course only in urban areas.

Another headache for farmers of those days was the arsonist. Early issues of this Journal relate the destruction by fire of barns by "barn burners" around Indianapolis, Ind., Denver and many other places.

Photo courtesy National Board of Fire Underwriters

Yesterday—no fire protection—total loss. Barns, outbuildings, house, all go when fire protection is lacking (and buildings are built to burn).

From Troy, N. Y., came the report that nearly one-half of all the fires in that area in the year 1877 were caused by lamp explosions and careless use of oil. Many small towns like Wheaton, Ill., alarmed by the many fires and plagued by drought, purchased wind mills and tanks for water supplies. In this connection the *National Firemen's Journal* advanced this sage advice: "The example should be followed by other suburban towns which are deficient in means to quench fires."

It is interesting to note that from the very first issue right up to the present, the editors of FIRE ENGINEERING have urged better fire protection for rural and small town areas. Thus we read in the May 18, 1878, number of the N.F.J. "To those places which are yet unfurnished with the most simple appliances for subjugating fires, we can only reiterate our advice, that the best fire preventive is a good Fire Department, and recommend each to establish one forthwith."

Bucket Brigade Starts Retreat with Advent of Gasoline

Motorization was the first great step forward in the development of organized rural fire fighting. The motor car not only brought the farmer good roads and a means of getting around, but it introduced automotive fire apparatus, which could get to his farm in a hurry to furnish him the maximum protection. So it was that bad roads, hand pumps and bucket brigades began their retreat in the early 1900's as village fire departments began to multiply and as motorized apparatus increased in favor. Motors, improved highways and telephones have proved the impetus for rural and small community fire protection, just as they have been factors in changing and bettering other conditions of rural and suburban life.

The country began to catch up with the city in its ability to concentrate fire fighting forces of a wide territory at the scene of a menacing fire in a comparatively short time. In certain areas, country-wide fire departments began to spring up. In others, towns and villages, and township fire forces organized for mutual protection. Thirty-two years ago, it is related, Gloucester County, N. J., with "a suburban and rural population of about 50,000 and area of 326 square miles," had a piece of fire apparatus, motor propelled, for about every ten square miles. It was not unusual for small chemical fire companies to respond to suburban fires, and beat out their city fire company rivals located much nearer the scene. In one chronicled instance (1920) a "two-in-one" motor fire truck of "one of the newer models" raced 20 miles and its volunteer crew was pumping water from a lake upon flames which threatened a little village, thirty minutes after it got the alarm.

With early motorization, little villages of only a few hundred population purchased small motor chemical engines, or other light apparatus. Nearly every motor truck manufacturer in the period between 1908 and 1928 turned out some sort of "fire apparatus." In most of the small communities the decision to organize a volunteer fire department and buy equipment came shortly after the largest house or mill, or store in the community burned to the ground.

Along about the period of these de-

Photo courtesy National Board of Fire Underwriters

Organized rural fire fighting makes use of water carriers. Keeping a Michigan pumper's booster tank filled by means of milk cans and other water carriers, when no water is available for big lines.

Example of exposure fire that razed costly farm of Dr. R. O. Blood, former Governor of New Hampshire, at E. Concord, N. H. Blaze of suspicious origin spread from outbuildings to main structure at left, while prize Ayshire breed cattle look on.

Photo courtesy National Board of Fire Underwriters

The local newspaper helped build this fire department. Small town newspapers can spark fire control and prevention improvements. This fire house in Elkland, Pa., used to be the town hall. The editor of the Elkland Journal, D. Lee Stoddard, sparkplugged idea of building an adequate fire force—and did it, to win the N. B. F. U. Gold Medal Award.

velopments, came the equally important improvements of water supplies. The small portable gasoline-driven water pump, found its way into farms and village fire departments, while larger gasoline units displaced the unreliable old windmill.

Turning the pages of the volumes of yesteryears, it is apparent that no single improvement was responsible for the growth of rural fire fighting. The chain of events usually went like this: fire wipes out property — perhaps takes lives. The "I-told-you-so's" beat the drum; the local newspaper (if one exists) takes up the refrain. "An aroused populace" meets and organizes a fire company. Somebody digs up a worn-out truck, or jalopy, on which is mounted a miscellaneous, weird and wonderful assortment of fire extinguishers, hose, and tools. Somebody else—probably a garage man or a local store keeper or other public spirited citizen, provides "parking place." Somebody is elected captain or chief—and the "fire department is in business."

Of course if the heat was really on and the populace sufficiently aroused, the organization took a more practical and efficient course. Representatives of fire apparatus companies were called in, and when the new apparatus arrived, there was ready a new fire house.

Many of these little suburban and rural districts of that time contracted for their fire protection with the nearest municipal fire departments. Still later, these communities found it more expedient to organize and operate their own fire forces.

Another factor, which had a bearing upon this growth, was the introduction of state laws authorizing farm communities to establish and support their own fire departments. In addition to permitting or authorizing the establishment of such fire protection, nearly every state in the nation has provided some sort of liability compensation to protect its volunteer firemen and their apparatus against injury.

Rescuing livestock from blazing barns is one requisite for rural firemen. Here helping hands try to corral one of five cows saved from burning barn of Joseph Lachance, Lewiston, Me., after it has returned to barn twice. Sixteen other animals were not so fortunate.

Still another important factor has been the lowering of insurance rates as fire protection in these rural and fire protection districts improved.

Assistance was also given by the Federal and State Governments. Back in 1930, FIRE ENGINEERING, in an article headed "Safeguarding the Farm by Local and Community Fire Protection," quoted the U. S. Department of Agriculture, which said: "If farmers would provide themselves with simple fire-fighting equipment and organize community fire companies, and if they would use more care and forethought in building, the Nation's $100,000,000 farm fire loss could be cut in half." Better fire protection has been promoted by various other Government agencies, as well as by the Grange, by the Chambers of Commerce, International Association of Fire Chiefs and other groups. But still farm fires are too numerous, too disastrous, too costly. Fire hazards have increased on the farm, no less than in industry, with the greater mechanization and electrification both inside and outside the farm home. Farmers are using and storing more petroleum products on their farms. Improperly stored gasoline and other flammables, and dirty or defective oil heaters, are two hazards that have resulted.

In the corn belt, artifical drying of grain is coming into wider use. Much of this equipment is home-made and has been a prolific source of fire. Yet it is a product of the times.

Notwithstanding all the to-do about lightning and the frenzy about lightning rods down the years, lightning damage seems to be increasing on farms, particularly damage to electrical equipment such as water heaters not properly grounded (N.B.F.U. June, 1949). What the future will bring, as farmers take on television, cannot be conjectured.

Nor has the farmer learned very much about either the location of his farm buildings, or their construction itself, from the viewpoint of the fire hazards. Apparently he is today making many of the same old mistakes, using combustible building material, and erecting structures to promote rather than retard fire extension. True, it would appear a majority of farmers, realizing the hazard of the shingle roof, are roofing with non-combustible covering, or with metal. Many, also, have adopted tile or masonry for their silos rather than burnable wood. But, for the most part, barns and outbuildings are constructed the same old way, to burn, and hay and other combustible materials are stored and stacked, as of yore.

Rural firemen must be prepared for forest and field fires. Here fire fighters attempt to save covered water reservoir in path of Green Valley, Cal., brush fire, which swept 8,000 acres of San Francisquito Canyon region of Los Angeles National Forest in 1951.

Hazards Greater, But So Is Fire Protection

From the foregoing it might appear that rural fire protection is in a pretty bad way. Actually, however, such is not the case. Real progress has been made. The future looks bright. At least, it appears that as the hazards on the farm continue to grow in extent and degree (just as they are increasing in home,

Photo courtesy Andy Palmer

Fire communicated to this big barn at Blackstone, Mass., from another burning structure, despite its "fireproof" roof, to result in total loss. Fire protection "too little and too late."

industry and business), so, too is farm fire protection being better planned, organized and executed.

New fire departments are coming into being at better than one a day on the average, throughout the country. They are better financed, better planned, better equipped, better trained, than those of even a decade ago. And they should be. Because they can profit by the mistakes and errors of bygone days.

Most of these newcomers to the fire service have a decided edge on their less fortunate progenitors in those fundamentals which, according to the insurance rating boards, are essential for good fire departments.

Apparatus and Equipment

Today's rural fire fighter has an almost inexhaustible array of fire control apparatus and equipment to draw upon. In automotive vehicles there are pumpers, double, triple and quadruple combination, with all the needed power, roadability and stamina to get their loads to the fire, and to make good the manufacturer's guarantee as to performance. There are pumper-tankers; high pressure pumpers, and combinations of high pressure and low pressure pumpers; there are auxiliary pumpers, and trailer pumpers. There are pumpers with booster equipment, with and without proportioners, and liquid foam, and wet water storages.

Not a little special equipment has been developed for rural fire fighting (and for coping with forest and field fires). Of this the small, light but powerful portable auxiliary and 'lift' pumps are proving indispensable. Today's rural apparatus also carries portable electric power and light plants, with improved flood, spot and other light; respiratory protective equipment.

Many a city fire chief might get ideas from studying the hose-loads of some of the modern rural and suburban fire units. For fast attack, for getting the most fire killing effect out of the least water, and for doing it with least labor and exertion on the part of the fewest fire fighters, the author commends some of the present day rural pre-connected hose layouts.

Training

Many a big city fireman will say that fighting fires on the farm is no different than fighting fires in the city. Fundamentally, he may be right, but he will have a hard time convincing the average rural fire fighter of the fact, and of the need for specialized training in his job.

Because of his belief, the progressive rural fireman is beginning to insist on special training for rural fire fighting. That training takes into consideration elements of attack, including getting water, relaying, rescue of farm animals as well as humans, and many other factors. Exponents of this specialized teaching are men like Abe Gent, Norton Ames and L. E. Shingledecker. This is one factor of rural fire protection that should see interesting developments in the years ahead.

Perhaps the most important advance in rural fire suppression has been in the field of fire service communications. It is true that the farmer is still cursed in some areas with the telephone party line, and in others with the dial system, both of which may fail momentarily or at length in an emergency, but it cannot be denied that rural telephone fire alarm service, for alerting the rural volunteer firemen today, far surpasses anything of the past. The fire service owes a very special tip of the hat to the small town and district telephone exchanges. Tomorrow, radical improvements may be had, notably in the field of electronic fire alarms, whereby the farmer will be able to transmit alarms with all the facility of the city dweller. At the same time, tomorrow's volunteer fire fighter will be alerted, and dispatched to the right spot, in the shortest time, more expeditiously than today. Finally, radio, which is already coming to the municipal fire service, will find its way into rural fire fighting. This doesn't mean rural fire forces are not now using radio. Some are and with remarkable results. But in the years ahead, every rural company unit will be radio-equipped, both as to mobile radio on vehicles and light portable, pack-set, or other walkie talkie radio. Nothing has done more to rectify the great weakness of on-the-fire-ground communications in wide-area rural farm fire fighting than short-wave radio.

Water Supplies

Not only are water supplies being provided for to small country and suburban areas, but water for fire fighting is made available in farm areas. Many states have undertaken water supply

Photo courtesy National Board of Fire Underwriters

Communications plus good roads plus cooperation equal good fire fighting. Rural fire fighting equipment, water carriers of every kind, including oil and gas tankers are mobilized to fight a hot barn fire near Lapeer, Mich. This was a successful type of "farmer's co-op" that paid dividends.

projects. Also, the farmer who today has unlimited electric power can, without too great cost or trouble, have his own water supplies and his own fire fighting pump. Which leads up to the detail of:

Self Fire Protection — and Prevention

There has been a noticeable change in the attitude of the farmer toward fire suppression on his own property. In the past he has been a tough customer to make fire conscious. He doesn't even now take very kindly to fire safety measures. Abe Martin the humorist used to say every farmer leaves a tree in a field as a cultivator garage. And the same policy of neglectfulness too frequently exists in his instituting of fire safety measures. Nevertheless, improvement is noted. Farmers are developing water supplies on their property. They are installing fire extinguishers. They are more cooperative with one another and with area fire fighters, in time of need than ever. They still are loath to make inspections, to locate their own violations, to permit outsiders to do so.

Photos courtesy National Board of Fire Underwriters

From top to bottom:

Electricity has come to the farm to increase conveniences—and fire hazards. Here approved lightning rods protect farm building "wired for work."

Gasoline and other volatiles are used on all modern farms, with increase in fire hazards. Such fuel should be stored underground.

Kerosene and other oils for heating and power are standard equipment for today's farms. Store in elevated tanks, apart from buildings.

Gasoline powered farm machinery is now the rule not the exception in today's farming. Blowers, such as this being repaired, require watching.

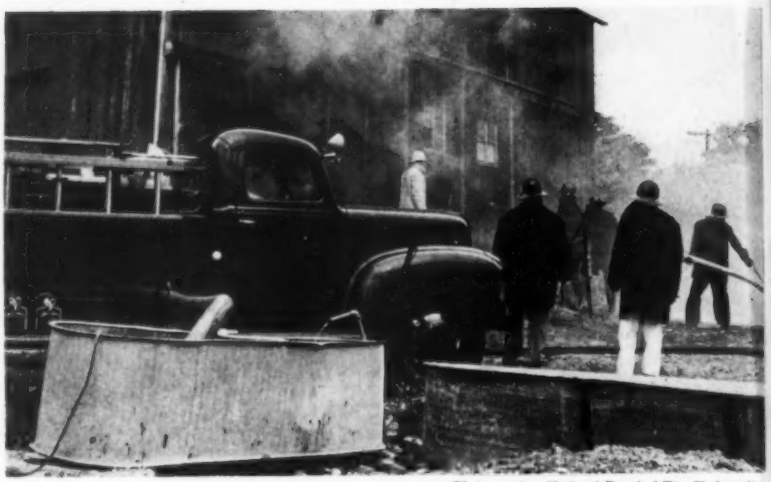


Photo courtesy National Board of Fire Underwriters

A New Jersey rural fire where community firemen successfully used booster, small hose, and later big hose, pump taking suction from stock feed tank.

Education and Enlightenment

The education of the farmer continues apace, education that includes "selling" him on the wisdom of protecting himself and his family, his property and crops, from destructive fire. He is already "exposed" to the influence of radio broadcasting, and tomorrow will be on the television circuits. He gets his farm magazines, and his weekly newspapers, and, more than likely, a paper from the nearest city. And don't underestimate the excellent fire prevention and fire protection work being done by the nation's small down press! His children are being taught fire safety in schools the like of which were never dreamed of three quarters of a century ago. His township or district fire department is usually a hive of activity with social and other gatherings to which he is invited. Yesterday, a fireman was a rather nebulous person to the average farmer: he wasn't sure that the fireman would be around when he was needed, and he questioned whether or not it was wise to even call on the volunteer in time of trouble. But that is changing. Already, the area fire fighters are making themselves and their services known in no uncertain terms. They are beginning to provide the farmer with the same sort of extra-curricular emergency service that their big city brothers are credited with. Burning off brush, rescuing animals out of wells, and so forth, are considered their legitimate tasks, no less than extinguishing fires. And, what is of even greater importance, pre-fire inspections of farm buildings and land by the volunteer firemen are for the first time an actuality.

Transportation

We've mentioned road improvements, but although better highways and back roads, and the motor vehicles, have made for better, faster travel, they have also created conditions which can, and do seriously handicap the response and operations of rural fire forces. Traffic control in operating at rural fires, or other emergencies, is a serious problem today, and will be worse tomorrow. The local constabulary, even when aided by county and state police, are not always sufficient to cut off roads and direct traffic, handle motorists and the common curiosity seeker. If response of rural firemen is to be speeded, rather than retarded in the days ahead, the rural fire forces will have to develop some sort of fire-police traffic controls and highway supervision.

Boston Firemen Make Good Stop at Railroad Shed Fire

It is not unusual for fire fighters to be held up in their response by an open bridge, or a railroad train at a crossing, but it is somewhat out of the ordinary when firemen themselves delay fellow fire fighters.

Such a situation happened in Boston recently where the crews of several companies and their equipment, responding to a three-alarm fire in a Boston & Maine Railroad shed, were delayed when the Warren Ave. bridge was opened to permit the passage of fireboats (Engs. 31, 47) of the Boston Fire Department. Among the stalled vehicles was the car of Fire Commissioner Michael T. Kelleher.

The fire started shortly before 1:00 A.M. on the morning of April 11th, last, was first noticed by a B. & M. police officer in an 800 foot-long shed of the B. & M. R. R. on the Charles River. The building was being used by the D. S. Woodberry Co., and was well involved by the time firemen reached the scene.

Three alarms were transmitted in quick succession and 15 Engine and 4 Ladder companies, two fireboats, a water tower and a rescue and lighting unit responded. The fire was successfully fought to confine it to the long structure. Three hundred feet of the long shed, however, were destroyed. Firemen were successful, also, in protecting all exposures, using water curtains. Several pumpers took suction from the Charles

(*Continued on page 691*)

Indirect Application of Fog—Some Interesting Results

Four Typical Fires Which Demonstrated Effectiveness of This Method

Editor's Note: **Cases attesting the effectiveness of indirect application of water, in form of fog, are multiplying. Among the latest to reach this journal is that of the West Memphis, Arkansas, fire department. For the data presented, the Editors are indebted to Chief Whit Murphy, of West Memphis.**

THIS department consists of two active Engine companies, having a total of 23 volunteers, and two paid men. Whit Murphy, president of the Arkansas State Firemen's Association, is full-time chief.

The department is equipped with one 750-GPM, Class A, pumper with 400-gallon booster, and one 1947 600-GPM, Class B, pumper, with a 350-gallon tank. A 1937 unit with front mounted pump and a 290-gallon booster tank is maintained as a reserve unit.

Other equipment includes latest type all-purpose nozzles and extension applicators for 1½-inch and 2½-inch hose. Members of the department, currently, are attempting to develop a "super" fog nozzle.

West Memphis has a population of about 11,200 and is sprawled out over an area of 7½ square miles, a short distance across the Mississippi river from Memphis, Tennessee.

First Use Was Accidental

Following a presentation on indirect application of water at the Fire Department Instructors Conference last winter, Chief Murphy recalled that his department had used this new method of fire control for the first time some three years earlier, and twice on subsequent occasions, accidentally and without knowing what happened, except that the fires went out.

Their first accidental use of the method of applying fog indirectly was at a fire involving a seven-room frame dwelling.

Standard response of this department is with two pieces of apparatus. Volunteers respond in their private automobiles.

On this particular alarm, there was some confusion as to the location, and Engine 1, followed by several of the volunteers, turned off Broadway onto South 9th Street, while Engine 2, with only one volunteer trailing, turned onto North 9th Street, enroute to the 300 block, the correct address.

Sensing some lapse of time before the Engine 1 would arrive, the lone volunteer began pulling off a single pre-connected 150-ft. line of 1½-inch hose, equipped with a fog nozzle, while the driver began pumping operations from the 350-gallon tank.

Making the stretch in fast time, the fireman broke out one small pane of glass in a window about the center of the building, one side of which was fully involved on the inside, opened his nozzle to fog position and held it there. By the time Engine 1 and other firemen arrived, all the flames had been knocked down and there was still water in the tank. A booster line was taken inside to extinguish remaining glowing embers, mostly in furniture upholstery, a mattress, clothing, and stacks of paper.

Unfortunately, an intoxicated man died in this fire and the death probably dulled any evaluation of the efficaciousness of the unusual attack strategy, at least for the time being.

The second accidental indirect application of fog came several months later at one of two simultaneous fires.

Engines 1 and 2 were enroute to a dwelling fire at Redding Street and North Center Drive when the alarm sounded for a grass fire at Broadway and 12th, in the business section. Engine 1 was re-dispatched to the grass fire while Engine 2 and its crew rolled up to the dwelling.

A hasty size-up showed that the fire was underneath and the nature of the smoke indicated that an oil-burning floor furnace was involved.

The ventilators around the foundation walls were stopped up against the cold of winter and the cover of a larger access opening was securely nailed shut. The house was fully charged with smoke.

By means of an axe, one of the foundation wall ventilators was opened and an extension applicator, with a fog head on a 1½-inch line was inserted and operated. In a very short time steam replaced the dense smoke and the fire was out. Not a drop of water was used inside the house, a burning area in the hallway having been extinguished by steam coming up through the floor furnace opening from underneath. According to Chief Murphy, total damage, includng necessary redecoration, amounted to $327.50. The value of the house and furnishings was more than $9,000.

During the same winter season, an identical fire at 220 South 21st Street was controlled by the same method with a loss of less than $250.

A similar fire at about the same time and under the same conditions, in a neighboring town, resulted in paid insurance claims of nearly $3,000.

As has been previously mentioned, these three incidents occurred some time in advance of the Miami tests and the subsequent report and release of the conducting Committee's findings at the F.D.I.C. in Memphis early this year. Consequently the West Memphis department had no technical information on the subject, and again, didn't know why the fires went out and, at the times mentioned, had no reason to check the length of time nor the volumes of water

Two pre-connected 1½-inch lines operating off 400-gallon booster tank had fire nearly under control by the time second pumper laid out 150 feet of 2½-inch supply line. Third 1½-inch line advanced to the roof of building at right was not used. Woman on roof (at right) fled her smoke-filled apartment through a window.

Tell-tale burned-out wall panel, in front of which was paper garbage container, leaves no doubt as to where fire originated. Hot cigar butt was blamed.

required; except that in their first experience it is known that something under 350 gallons of water was used until the booster line was put into operation to complete the overhaul job.

Following close on the heels of the Memphis Conference, each year, is the Arkansas Fire Department Instructors Training School under the direction of Chief John E. Hurley, state fire instructor, assisted by Chief W. A. Turner. Both are familiar figures at the F.D.I.C.

Featured at each of these annual schools is at least one topic borrowed from the F.D.I.C. This year, with the cooperation of the Arkansas Inspection and Rating Bureau, Chief Hurley was fortunate in having Emmett T. Cox as a speaker, with two repeat presentations of his Memphis program.

Chief Murphy and one of his volunteers attended the session and brought back the story of indirect application of water fog.

They explained the theory to the entire department, reviewed the aforementioned experiences and made plans for a trial at the next confined fire.

The opportunity for their first planned demonstration of the effect of this new method of controlling confined fires came late in the afternoon of March 25.

Involved was half of a small, four-room frame, imitation brick sided house at 717 South 9th Street—a one and a half mile run.

Two pre-connected 1½-inch lines were stretched in from Engine 3, but only one was used. Two men, with a single 1½-inch line, equipped with an all-purpose nozzle delivering 65 GPM at 100 pounds N.P., on fog, advanced to the front door, knocked out a pane of glass, opened the nozzle to "fog" position, stuck the nozzle in and aimed it at the ceiling. In 1 min. 37 sec. an all-steam cloud enveloped the interior of the building. The nozzle was kept operating another 18 sec. before entrance was made through the door to kill the remaining deep-seated embers. The fire had consumed all of the furnishings in one room and part in another and had just begun breaking out around the eaves when the first due company arrived.

Investigation, after overhauling was completed, showed that no fire had communicated to the two bedrooms and, further, that only the top covers of the beds were slightly damp, possibly from a mis-directed fog stream during overhaul.

An interesting occurrence was that of the ignition of the Celotex ceiling in a corner of the kitchen, some 30 minutes after the fire was supposedly out. Firemen were still present, however.

An accurate check of the volume of water used was spoiled by the inadvertent opening of the intake valve on Engine 3, to which was connected a 2½-inch supply line, laid out as a precautionary measure. However, it is believed that not more than 250 gallons were used, including that needed to quench a still smouldering divan on the outside.

On May 8, at a gathering of 160 members of the Northeast Arkansas Firemen's Association, including 18 West Memphis firemen, Carl S. Smalley, executive secretary of the State Fire Prevention Association, used color slides made from pictures taken during the Miami tests, to illustrate a discussion on

Fireman S. L. Sims (top) awaits order to shut his line down while Ralph Carpenter opens his coat for a little cool air and L. H. DeVaugh continues to "scotch" the ladder. Note large volume of steam coming out two rear windows. Seconds before this picture was snapped, the alley was filled with dense smoke.

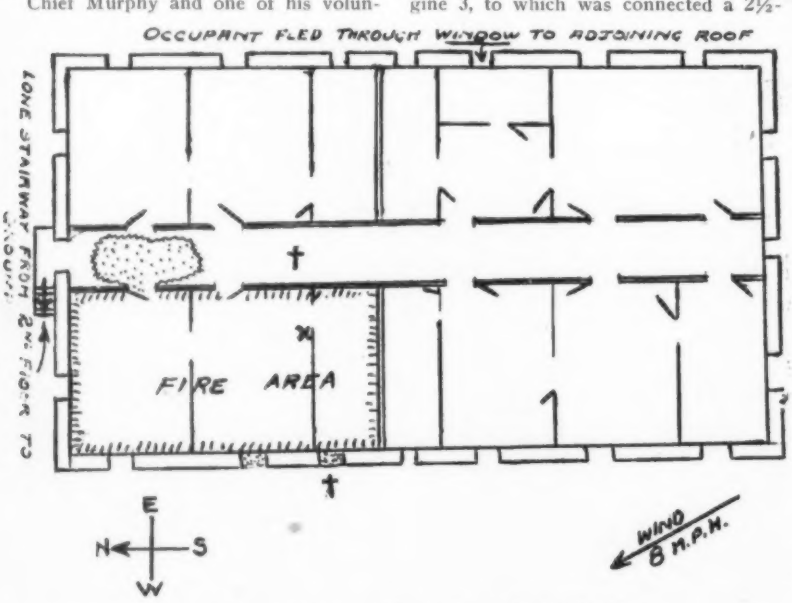
the possibilities of applying fog indirectly.

It is possible that the knowledge gained at this meeting played no small part in preparing the West Memphis men for a real test which came on May 22.

At 6:13 p.m., the alarm sounded for a fire at 220 East Broadway, a two-story brick, wood joisted building housing an appliance and sporting goods store, and law offices on the ground floor with apartments taking up the entire upper story.

Upon arrival, firemen found flames shooting out through two upper story windows and cock loft ventilators near the center of the 32′ x 60′ structure.

Engine 3 took a position immediately in front of the building. First arriving volunteers stretched in two pre-connected 1½-inch lines, with all-purpose nozzles attached. One was advanced through the smoke darkened alleyway to the rear of the building and up an outside stairway to the second floor. The second line was retained in the alleyway. An extension ladder was



Sketch of fire area.

ordered to be raised to a vantage point to the side of the smoke- and flame-belching windows. Meanwhile a straight stream was directed from the ground into one of the windows while the ladder was being raised. The line was then advanced up the ladder, nozzle opened to fog position and stuck into the window-framed inferno.

At about this point, Engine 2 rolled up and laid a 2½-inch supply line from Engine 3 to a hydrant across the wide expanse of Broadway and took suction there.

In the meantime, an extension applicator on the line taken into the second floor via the rear stairway was being operated in the cock loft by two Air-Pak protected volunteers, while a third 1½-inch dry line was advanced up a ladder to the roof of an adjoining one-story building. This line was stretched in as a precautionary measure and was not operated.

Both captains were instructed to have their nozzlemen shut down their lines 30 seconds after the smoke was dissipated by steam.

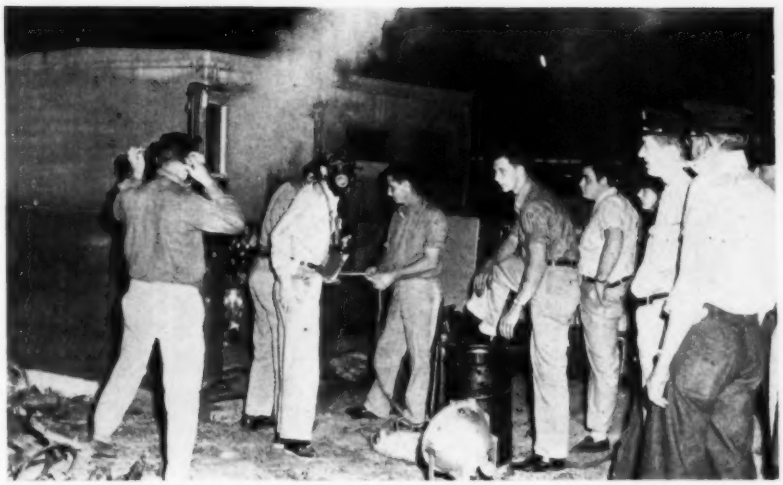
Fire damage was confined to the three originally involved rooms making up one apartment, which was gutted, and to roof joists and decking which were already afire.

As soon as a sufficient number of firemen were on hand to relieve those first on the scene and working into the smoke and heat, those unoccupied elsewhere participated in salvage operations.

Occupants of the remaining apartments slept in their smoke odorized, but dry, beds that night. There was no water damage to the uninvolved apartments and surprisingly little to the store and offices below.

Seven minutes and approximately 1,000 gallons of water were required to bring the $6,150.00 fire under control.

Picking up, salvage and overhaul, and receiving congratulations from well pleased business and professional people consumed about an hour and a half and both companies went back into service at 7:45 p.m.



Students use respiratory protective equipment in smoke house at Arlington County School.

Arlington County, Va., Completes 40-Hour Fire School

Everything from basement fires to the use of aerial ladders and life nets was included in the curriculum of the 40-hour fire school for volunteer firemen held recently in Arlington County, Va. The month-long school was participated in by 75 volunteers from the County and the neighboring communities of Lake Jackson and Mt. Vernon.

The course, which was conducted under the direction of Drill master Joseph H. Clements, was designed as a follow-up to a 10-hour basic school presented earlier in the year.

All of the County's equipment was made available to the School, and instructions were given by officers and men of the paid departments.

The volunteer students were divided into three groups for purposes of instruction, and drilled in pump operations, ladder work, gas masks and ventilation, rescue operations, ropes, salvage and hose practices. In addition, Los Angeles Fire Department training films were shown.

Along with their instruction course, the volunteers took part in experimental tests of a new type of foam to be used against oil fires. They were also given a practical demonstration of the effects of fire on large television tubes.

Owner Ray and Fire Chief Whit Murphy look over large stock of ammunition (highly susceptible to water damage), most of which did not even get damp. Note Celotex ceiling. Apparently this highly absorbent material is unaffected.

Elmendorf Base Has Costly Warehouse Fire

Two warehouse fires occurring in May and June, the first at Elmendorf Base, Elmendorf, AFB, Alaska, and the second at Fort Richardson, nearby, early in June, gave base and fort fire fighters tough workouts and resulted in the destruction of much essential government material.

Termed the costliest fire ever to hit Elmendorf, a blaze, which broke out at 7:01 on May 28th, quickly involved a large quonset type warehouse. Base fire equipment fought the stubborn blaze, which wrecked the structure measuring 130x165 feet, and which was loaded with aircraft parts, communications material and other equipment.

Fort Richardson fire crews were called to cover the Elmendorf base during this action. Ten base firemen were overcome by smoke, some being treated at the base infirmary.

A few days after this fire, another blaze occurred in a chemical warehouse at Fort Richardson. This structure also was destroyed along with its contents.

CHAPLAIN NORRIS T. MORTON

Fireman Killed in Fall from Truck

Volunteer fireman Henry Tomascewski, of the Westhampton Beach, L. I., Fire Department was fatally injured the night of July 11th when he fell from the running board of the fire truck to Montauk Highway in Quogue. He died en route to a hospital.

The Westhampton Beach firemen were on their way home after attending a bazaar sponsored by the volunteers of East Quogue, Tomascewski was a member of the racing team of the Westhampton Beach Fire Department and a veteran of World War II.

Fire Service Ladders and Their Use—Part XXVII

Ladder Evolutions: Hoisting Different Ladders

By ROI B. WOOLLEY

Editor's Note: **The author gratefully acknowledges the cooperation of the Committee on Firemen's Training, Fire Department Instructors Conference, Richard E. Vernor, Chairman, for much of the material upon which this Chapter is based. The photographs shown in the Figures were taken by H. F. Rothery of the District of Columbia Fire Department.**

IT IS frequently necessary to hoist ladders of different types and lengths to the roofs or floors of buildings in order to make rescues or to aid fire control operations. Very often entry into a structure can be effected from the roof of the building by dropping a ladder through a skylight or other opening. Sometimes it is necessary to bridge alleys or areaways between buildings. More often it is necessary to use short ladders of one kind or another in inside overhauling operations.

Under these conditions, the ladders may most easily and effectively be hoisted by ropes.

Every piece of fire apparatus, whether pumper, ladder truck or rescue unit, should carry suitable rope for this operation, whether they carry ladders or not. Where ladders of any nature are carried, the apparatus should not only be equipped with suitable rope, but one or more roof rollers should be available.

It is the practice in most municipal fire departments in fighting fires in buildings where vertical ventilation is desired to send at least two men to the roof of the involved structure as quickly as possible. Many departments make it a rule for these men to take with them roof-roller, rope and axe. Some departments require men to carry other equipment, such as claw tool, but it is generally considered essential that whatever else the crew may carry, they must take a rope sufficiently long to reach from the roof to the ground, and a roof-roller. The rope is insurance against the men being trapped, and with the roof roller it can be used to bring up hose lines, ladders or other necessary equipment.

Few Basic Changes in Hoisting Ladders

For nearly half a century the procedures for hoisting fire department ladders by ropes has remained the same. Even today, many fire departments adhere to the methods originally described in the *Fire Chiefs' Handbook,* which were based on the practices followed by many of the nation's largest municipal departments, including New York. As a matter of fact, the following procedures, taken from the *Fire Chiefs' Handbook* are still in effect in New York, and elsewhere. A number of fire colleges, however, are recommending modifications of certain operational details, and it is the purpose of this Chapter to picture and describe these latest methods. But before doing so let us review the instructions included in the *Fire Chiefs' Handbook*:

When hoisting ladders by ropes to the roofs of buildings, use the following rules: for 10 ft., 15 ft. and 20 ft. ladders to find the point at which the rope should be placed, divide the length of the ladder by five and pass the rope through the rung of the ladder at top and tie at the bottom. For example, with a 20 ft. ladder, dividing by 5 gives 4. Pass the rope through the fourth and fifth rungs at the top of the ladder and tie two half hitches and a binder knot near the bottom rung of the ladder and then turn the ladder over so as to have the ropes between the ladder and the building when hoisting and lowering the same.

For 25, 30 and 35 ft. ladders, divide by five and multiply by 2, then tie two half-hitches on each beam of the ladder, and then make a bowline above where the hitches are tied. Put on a binding knot after the bowline has been tied, and also make sure that the knot (bowline) is midway between the two beams. Then turn the ladder so as to have the ropes between the ladder and the building when hoisting or lowering it. An example of the above calculation is as follows: 35 ft. ladder divided by 5 gives 7 which multiplied by 2 gives 14. The two half-hitches and bowline should be tied 14 rungs from the top.

It is a good rule to raise all straight

Fig. #1

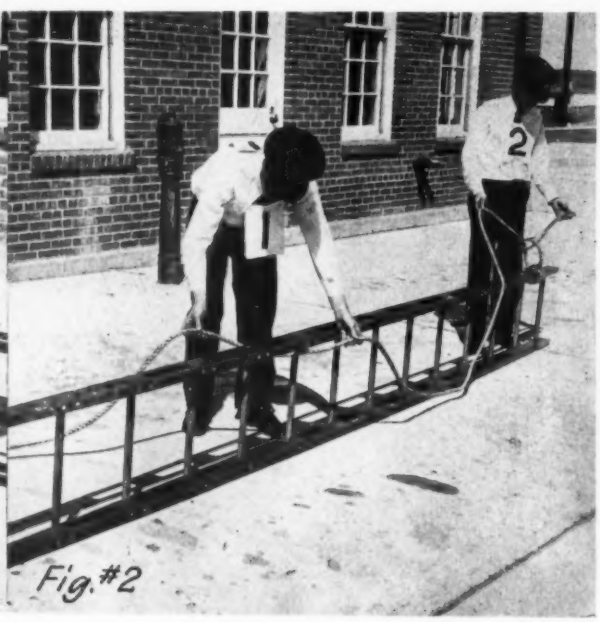


Fig. #2

Fig. #3
Fig. #4
Fig. #5
Fig. #6
Fig. #7
Fig. #8
Fig. #9
Fig. #10
Fig. #11
Fig. #12

Fig. #13

ladders heel first so that when they are "broken" over the roof, the heel will go direct to the point of raising. This is important as it frequently happens that the ladder cannot be turned conveniently, particularly on small roofs.

Before a line is tied to a ladder the ladder should be placed in the best position for tieing and hoisting. Some instructors prefer to place the ladder to be hoisted at right angles to the building, at about where the rope hangs from the roller, which is firmly fastened on the roof. If the ladder is to be raised butt first, the heel should be toward the building.

Some authorities, however, prefer to place the ladder horizontal to the buildings, as shown in the following accompanying Figures. One reason is that in this position the ladder does not cut off walkways, and it permits the man doing the tieing to concentrate on his work without having to watch to see that nobody falls over the ladder. This may be an important factor in night operations.

Some instructors advocate making most of the ties with the ladder laid flat on the ground. Others prefer to operate with the ladder on a beam, or rail. With most short ladders, such as

Fig. #14

are shown in the illustrations, less effort is required to make the ties with the ladder on its side rail. Where the bowline must be tied, as is so widely the procedure in hoisting the larger ladders, a better job can be done if the ladder is laid flat (Figs. 11 to 16).

Taking first the short ladders (most generally used in roofwork): To start the ladder tie, with ladder on one rail, the end of the rope is threaded through the ladder approximately one-third from the top of the ladder. The difference of one rung up or down should not matter particularly in this form of tie. The method of threading or passing rope through rung is shown in Fig. 1.

Fig. 2 shows the completing of the tie. The second man has taken the end of line that is threaded through the ladder and tied it on the beam between the first and second rungs of the ladder. The rope is secured with a clove hitch and in the illustration the man is just adding the safety "binder." A closeup of the hitch on the beam is shown in Fig. 3. In this position the ladder is erected against the side of the building, with the line under the top four rungs, ready for hoisting, as shown in Fig. 4.

On command, the crew on the roof hoist away while the ground crew see that the ladder is clear of obstructions and that the area below ladder is cleared of people. As the top of the ladder

Fig. #15

reaches the roof, the crew lift one rail onto the roof-roller (Fig. 5) and then the ladder is "broken down" over the edge of the roof as shown in Fig. 6. Note that the straight and not the trussed side of the beam is placed on the roller. This evolution is further shown in Fig. 7 where the two-man crew prepare to walk the ladder back.

Ladders using this form of tie are lowered the same way as they are raised —only in reverse (Fig. 8).

An alternate ladder tie, preferred by some, but which does not hold the tip of the ladder under as close control as the foregoing method, is illustrated in Figs. 9 and 10. In this tie, the hitch is

Fig. #16

placed on the beam one rung below the point where the rope is taken through the ladder.

Hoisting Long Ladders

The procedure shown differs little in concept from that described in the opening paragraphs of this Chapter, in which the use of the bowline is described. However, the method of tieing and applying the bowline as shown here differs from the old procedure.

The first step is to lay the ladder flat. A bowline loop is tied as shown in Fig. 11. The bowline loop is tied in the standing line and the foot is used to keep the loop sufficiently long for the succeeding operations.

The next step is to thread the loop through the ladder rungs, one-third the distance from the top of the ladder, Fig. 12. The rope is then taken beneath the ladder to the top, where the loop is brought out and over the tips of the two beams (Fig. 13). The loop is then slid down the ladder, and pulled taut by the standing line. The ladder is now ready to be hoisted (Fig. 14).

At the command, men on the roof hoist away while crew below guide the ladder and clear area. In this hoisting operation the rope is between the ladder and the building, so tied that the top of the ladder swings out to avoid window sills or other wall obstructions. The rope is run over the roller, but this is not absolutely necessary (Fig. 15). If no roller is used, care must be taken to see that rope is not frayed by chafing.

(*Continued on page 727*)

Industrial Fire Fighting

Part 7 of a Series

By W. E. ROSSNAGEL
Fire Protection Engineer

XI. Fire Fighting Technique

Size up the fire as quickly as possible, and decide the type of extinguisher to be used. Keep in mind that more than one type can be used on the fire simultaneously. No hand extinguisher will last for more than a minute, so don't start it operating until you are in position at the fire. In other words, don't waste the extinguishing agent.

Try not to cause any more damage than is necessary from the water, foam, or other extinguishing agent. If the fire is in solid material, be sure that it is entirely out before leaving the scene. Take an ax, a pike pole, or merely a small bar or pipe, and separate the charred timbers so that the air will get to them and cool them to below the ignition temperature. That is why firemen, contrary to the popular belief that they love to wreck things in general, tear down ceilings, open up walls and cut holes in roofs so that they can make sure that the fire is completely extinguished.

If the fire is indoors, open the windows on that floor and on the floors above to allow the smoke to escape. Opening them from both top and bottom, particularly on the leeward side of the building, is recommended. When the smoke is replaced by fresh air inside the building, the smoldering fire will blaze up, but it is easier to fight a blaze that can be readily seen than a smoldering fire concealed in a smoke-filled room.

Be sure that the fire doors are all closed to keep the fire confined to the location where it originated. If the smoke is thick, gas masks must be worn. The all-service canister mask is o.k. unless there is a deficiency of oxygen, which condition is indicated when the fire fails to blaze vigorously.

If it is all smoke and little or no blaze, then a Chemox, Air-pack or other mask which supplies its own oxygen or fresh air, must be worn. When masks are required, not less than two men must work in a team, and it is advisable for them to have life lines attached to their bodies.

Many almost-extinguished fires have rekindled themselves after someone has thought the fire to be out and closed the sprinkler control valve. When closing the valve, stay right there for an hour just in case reignition should take place.

XII. Electrical Hazards

In any fire in an electric motor transformer, the damage will probably all have been done before you arrive on the scene, and the equipment will have to be completely rewound; so a few minutes delay, while you get the power turned off, will probably not cause any further property loss. Then use any extinguisher rated for a Class "C" fire, such as CO_2, Dry Chemical or Vaporizing Liquid. These are all non-conductors of electricity, even on very high voltages, but it is safer to wait until the equipment is "dead."

If the transformer or switchboard room, it may not be possible to "kill" all the equipment, and in that case the extinguishers mentioned should be used carefully. Water fog from the high-velocity fog nozzle (but *never* from the low-velocity fog applicator) can be used in the vicinity of live high tension apparatus. In fact, the Detroit Edison Company has demonstrated at its Fire School that fog can safely be directed at a conductor energized at 120,000 volts, from a short distance away. And who wants to get any unnecessarily closer to any "live" apparatus when there is trouble in it?

But don't use the "solid" stream of water from an ordinary open nozzle on high tension apparatus or on wires from closer than 50 feet, if you know what's good for you. And then only use the solid stream as a last resort.

Look out for fallen electric wires, indoors or out-of-doors, and consider them all alive. Don't step into a puddle where a fallen wire is lying. Likewise, don't step into a puddle into which water is flowing from a fire in live electrical apparatus. Firemen's boots are not designed for electrical protection, so don't take any chances even if you are wearing boots.

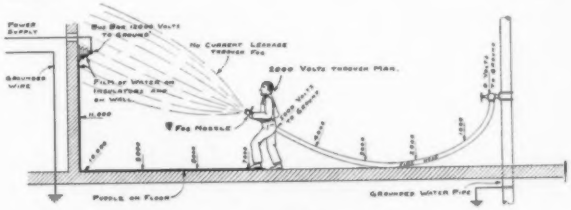


Fig. 36

It has been proven that there is little or no danger of electric current flowing from a live conductor to a hose nozzle through the fog curtain. There may be, however, a serious hazard, although it is not realized by many fire fighters, if fog is played onto live equipment so as to form a film of water over the insulators, and possibly down a building wall to the floor where a puddle is formed. If a fireman holding any metal hose nozzle (which is electrically grounded through the water in the hose) should step into such a puddle, his body might be the closing link between the live conductor and ground, and he could receive an electric shock, possibly resulting fatally. (See Fig. 36.)

Likewise, a similar hazard may exist if a fireman, even without holding a hose nozzle, should step into a charged puddle between the live conductor and a location where it may be in contact with a metal water pipe or other good electrical ground.

Let's consider a variable resistance coil-type rheostat, such as may be used for dimming building lights, or for any other purpose, as shown in Fig. 37. As the sliding contact is moved to the right 10" along the coil the voltage between the coil and ground (which is the voltage applied to the lamps) gradually reduces from 120 volts to 20 volts. In other words, there is a constant voltage drop along the length of the coil, at the rate of about 10 volts for each inch the slide is moved. If the wires from a voltmeter are touched to the coil 1" apart, anywhere along the coil, the reading will be approximately 10 volts.

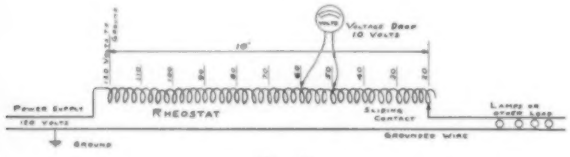


Fig. 37

Now let's consider a practical problem which is almost identical, except that the voltages are 100 times as high. Assume that water fog is being played on a transformer fire, and that the fog also envelopes a bare 12,000 volt bus bar mounted on insulators on the wall. The water forms a conductive film on the top and bottom of the insulator cups, then runs in a film down the wall to the floor, where it forms a large puddle, eventually reaching a pipe riser at the other side of the room which is electrically grounded.

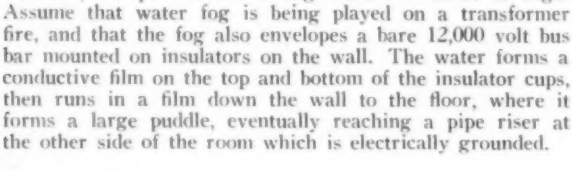


Fig. 38

A fireman walks into this puddle and receives an electric shock. Why? Referring to Fig. 38, the bus is energized to 12,000 volts, and the film of water and the puddle act as the variable resistance, gradually reducing the voltage to ground to nearly zero at the pipe. This we shall say is about 24 feet from the bus (8 feet down the wall and 16 feet across the floor.) The voltage drop (it may not be exactly uniform) is approximately 500 volts per foot. With his feet a foot apart the man has a voltage drop between his feet in the puddle of about 500 volts, the current passing up one leg, through his body, and down the other leg. Even with lower voltages and greater distances, the shock may still be fatal.

So, as mentioned above, beware of puddles on the floor in the vicinity of live and wetted electrical insulators, unless you are certain that the puddle is in contact with a good electrical ground *between you and the electrical apparatus.* Properly installed motor frames, transformer casings, structural supports for switchgear and busses are all electrically grounded, so in general no hazard should be presented. But, as we all know, in some poorly kept plants this equipment may not be properly grounded, and it is at such locations that the hazards described above may exist. Likewise a fallen live wire in the street may be disastrous to a man who steps into the same puddle with it. Watch out.

XIII. Operation with Municipal Fire Departments

Keep in mind that when the Fire Department arrives at a fire, the chief or other ranking officer is in charge of all fire fighting activities, and the plant men *must obey* his orders. The plant supervisor in charge at the time of the fire should immediately make himself known to the Fire Chief, and he should acquaint him with all special hazards such as high voltage apparatus, propane installations, pressure vessels, hazardous chemicals, etc., and advise him of the location of control valves and other pertinent equipment. Any sensible Chief will be receptive to advice from the plant personnel.

If by chance the Fire Chief will not heed the warning of the plant supervisor relative to special hazards, such as the danger of water from a fire hose causing an electrical flashover or an explosion, then should the danger be serious enough, all the plant personnel should be evacuated from the area, and all the responsibility will rest on the Fire Chief. Fortunately, however, during the past few decades, firemen have been very cooperative with the plant personnel, and it is very seldom, if ever, necessary to take such action.

Conclusion

Fire prevention is better than fire extinguishment. Practice good housekeeping. Know the location of the extinguishers and hose outlets where you are working. Study the different types of extinguishers in the plant and know what type to use on what kind of a fire. Also know how to use them.

There are no two fires alike, so know the theory of fire extinguishment and then decide the best method of fighting it. Your own good judgment at the time of the fire is worth more than a whole book full of rules.

Ventilate the building to relieve the smoke, and make the source of the blaze visible.

Make sure the fire doors are closed to isolate the fire. Don't shut the sprinkler valve until the fire is all out; then station a man at the valve for at least an hour just in case the fire breaks out again.

Remember the three basic rules for fire fighting:

(1) *Locate* the fire;

(2) *Confine* it so that it cannot spread, and

(3) *Extinguish* it.

Fairfield County Plan Selects New Officers

Fire Chief Emmet Kozubski, of the Beaver Brook Volunteer Fire Company, Danbury, Conn., was elected President of The Fairfield County Fire Chiefs' Emergency Plan, at the annual meeting of that Group held on May 28 in Glorieta Manor, Bridgeport. Chief Kozubski succeeds Chief B. Fred Smith, of Turn of River, Stamford.

Other officers elected were George Smith, Chief of the Remington Arms Company Fire Department, Bridgeport, First Vice-President; Chief Harold Shippey, Westport, Second Vice-president; Asst. Chief Sylvester Jennings, Bridgeport, Third Vice-president; Capt. Eugene Maher, Darien, Treasurer; Lieut. Anthony Germinaro, Beaver Brook, Danbury, Secretary; and Asst. Chief Orvil Sawyer, Old Greenwich, Sergeant-at-Arms.

Named to serve on the Board of Directors were Chiefs Joseph Strolin, Stratfield; Fred Barber, Long Hill; Fred Smith, Turn of River; John O'Brien, Weston; William Purcell, Shelton; William Hanley, Darien; Howard Hoyt, New Canaan, and John Ireland, Danbury.

—Tom Magner.

PAY AND WORKING CONDITIONS—SEVENTY FIVE YEARS OF PROGRESS

Working Hours Have Been Cut to One-Third

Wages Have Increased 300% in That Period;

FIRE departments today are attracting young men of the finest calibre. Many candidates hold college degrees; and many young men already in the service are continuing their education through correspondence, or extension courses, or by attending advanced schools in their time off.

One factor, and one factor alone, is responsible for this trend: better pay and working conditions.

A comparison of pay and working conditions of seventy five years ago and today shows some amazing developments. In 1877 a young man who wanted to enter the fire service had to meet qualifications similar to the following, which were the entrance qualifications of the Chicago, Ill., Fire Department of that year:

1. He must be a citizen of the United States.
2. He must be able to converse understandingly in English.
3. He must be able to write legibly his own name.

If these three requirements were met, and the candidate also appeared to be in good physical condition, and of proper age, he was given a probationary appointment in the fire department at $60 per month.

In most cases, the fire chief, or the fire commissioner, made the appointment.

There were relatively few paid fire departments in 1877 as compared with today. Even the City of New Orleans had a volunteer fire department in 1877.

The extent to which fire department salaries have increased in the seventy-five years is indicated by the following table, which gives the average of fire department salaries in three large cities (New York, Chicago and Detroit) for 1877 and 1952.

Position	1877	1952
Chief	$3,427	$13,170
Asst. Chief	2,542	9,450
Deputy Chief	1,863	6,821
Captain	1,245	5,551
Lieutenant	1,100	5,023
First Grade Fireman	932	4,355

These three fire departments were among those having relatively high scales of pay. Many other cities paid their first grade firemen less than $700 a year in 1877.

Working Conditions

In 1877, a majority of fire departments had a six-day week of twenty-four hours per day, or a total of 144 hours of duty. Today the work week varies from forty-eight to eighty-four hours per week, with the majority having a seventy-two-hour work week. One city has a forty-four-hour work week.

There is no record of any city making a clothing allowance back in 1877. Today, approximately one-half of the cities in this country make an allowance for clothes, varying almost with each community.

As far as sick leave is concerned, few cities permitted sick leave with pay back in 1877. Today, with but rare exceptions, all cities grant sick leave with pay, some for unlimited periods, and others for a year or less.

Fire department pensions were unknown in 1877, and financial relief for families of injured or deceased firemen was available only from relief and charitable associations maintained by the fire department, and which were limited in the amount of aid they were able to give.

Today, practically all members of paid fire departments receive pensions on leaving the service after serving the required number of years.

Uniforms were not commonly worn seventy-five years ago. In 1882 the Board of Fire Commissioners of San Francisco ordered that officers and permanent men wear a uniform of a dark blue, with black hat and gilt buttons. Three trumpets indicated a chief; two trumpets an assistant chief; and one trumpet a district chief. The Board of Commissioners added, as an interesting observation that "the firemen of San Francisco may possibly object to wearing the uniform because of democracy or modesty."

Other factors contribute in making the profession of fire fighter more attractive today. Civil service appointments and promotions eliminate unwar-

Meals are prepared in modern kitchens in fire stations today.

A Modern Watch Desk. Photo shows the alarm being received at the fire house and recording same on the board. The left hand pressing a button sounds the alarm to the firemen of the house.

Airy, healthful dormitories house today's fire fighters.

ranted discharge of men from the fire service. In other words, civil service protects the fireman's job. With this added security, many young men enter the fire service with the aim of making it their career. In addition to the shorter work week, firemen today also receive annual vacations varying from one to four weeks, with the great majority receiving two weeks' paid vacation.

LEGAL HAZARDS ENCOUNTERED BY FIRE DEPARTMENTS ON HIGHWAYS

Some Aspects of Liability of Concern to Fire Departments and Fire Apparatus Drivers

By William Jerome Daly, Jr.*

To paraphrase Gilvert & Sullivan, "a fireman's lot is not a happy one" if he tangles with the law. Several recent court decisions indicate that, contrary to popular impression, the right of way enjoyed by fire apparatus and other emergency vehicles has serious limitations. Here are a few cases which should give some food for thought.

In Kalamazoo, Mich., a fire truck responding to an emergency call collided with an automobile at an intersection. The city sued for damages to its truck, but the trial court directed a verdict in favor of the defendant because of contributory negligence on the part of the firemen. On appeal, the Michigan Supreme Court pointed out that the statute which gives emergency vehicles the right of way not only requires the sounding of an audible signal by siren, bell or exhaust whistle, but also stipulates that the operator has the duty to drive with due regard for the safety of others.

In this case, even though the fire truck approached the intersection with its siren sounding, the facts showed that the lieutenant sitting next to the driver did not see the automobile until just before the collision. This, said the court, was a failure on his part to keep a reasonable and proper lookout for other cars. The decision against the city was affirmed. (City of Kalamazoo v. Priest, 49 N.W. 2d 52, 1951).

In Albuquerque, N. M., a pumper en route to a call for an inhalator hit a private car, which was crossing with a green traffic light, at an intersection. The occupants of the car sued, and several defenses were raised by the city. The court held that the exemption claimed by the city from compliance with the state laws only applies when a fire department vehicle is being driven in response to a fire alarm, and that an inhalator run is not covered.

Next, the city maintained that a fire truck answering a request for an inhalator is a public ambulance within the meaning of the New Mexico statute exempting ambulances traveling in an emergency. The court denied this contention flatly, saying that "the use of the fire truck to convey an inhalator to a sick person did not change the status of the truck and thereby make it an ambulance."

Finally the city argued that its fire truck came within the law which gives the right of way to police and fire department vehicles when operated in official business. No, said the court, "the only official business designated by the legislature is that of responding to a fire alarm, or police call." (Tiedebohl v. Springer, 232 P. 2d 694, 1951).

A case involving a bona fide ambulance had a different result in Broome County, N. Y. In response to an emergency call it approached an intersection, with the red light against it, at forty-five miles per hour, and collided with a taxi which had the green light and was going at about twenty miles per hour. The New York Supreme Court ruled that "the ambulance not only had the right of way but it also was not bound by the usual command of the red light, if driven with caution and adequate warning was sounded." The ambulance won. (County of Broome v. Binghamton Taxicab Co., 96 N.Y.S. 2d 59, 1950).

To get back to fire fighters, the personal liability of a fireman arising out of an accident came up for decision in New Jersey. The town of Lyndhurst employed a driver for its fire apparatus who was involved in a crash with a private car and was sued personally. He lost the case, to the tune of $10,675. Then the fireman discovered a New Jersey statute which requires every municipality to insure drivers of fire and police apparatus. But the town of Lyndhurst had neglected to carry the required insurance. The driver then sued the town to compel it to pay to him so much of the judgment against him as would have been covered by insurance if the town had carried such liability coverage.

It was admitted that the fireman was an authorized driver for the municipality and that he was acting in pursuance of his duties at the time of the collision. Nevertheless, the New Jersey Supreme Court ruled that even though the statute required every municipality to take out public liability insurance, it did not provide a remedy for the individual employee who might suffer because of the municipality's failure to do so. The fireman driver's claim against the town was denied. (Osbach v. Lyndhurst Township, 81 A. 2d 721, 1951).

The wisdom and justice of some of these decisions may be open to question, but it would be beyond the scope of this article to embark on a crititcal, legal analysis of them. From a practical standpoint, these decisions are important to fire departments, large and small, and to individual firemen because they demonstrate the legal hazards which may be encountered in the routine performance of their duties.

Several steps can be taken to reduce these hazards, however. First, a thorough review should be made of the laws and court decisions of your state, and also of any applicable town or municipal ordinances, in order to determine the rights, duties and liabilities of the fire department and its personnel when traveling on public streets and highways in the performance of their official business. If it appears that the state of the law is not clear or that it places an unfair burden on firefighters, recourse should be made to the legislature for remdial action.

The courts can only apply the law as they find it, not as they think it should be. Hence if the law in your state needs change or clarification, the place to do it is on the legislative level, and the time to do it is now, and not after the next accident.

*Member of District of Columbia and New York Bars.

Peekskill Honors Dead Firemen

More than 200 firemen and others attended memorial services on August 3rd honoring seven Peekskill firefighters who died in a fire which destroyed the Fleischman grain warehouse in that city on August 2, 1918.

Services were held at Depew Park, where firemen's markers were placed on the graves. Fire Chief Louis A. Cole, Mayor John E. Hayes, and other dignitaries, later placed a wreath on the placque dedicating the fireman's wing at the Peekskill Hospital.

FIRST "BOROUGH CALL" IN YEARS SOUNDED FOR BROOKLYN BLAZE

Fifteen Buildings Destroyed by Fire Originating In Old Car Barn; Many Firemen Injured

THE biggest and most costly fire of the year, thus far, in New York was fought (on June 30) by the heaviest concentration of fire forces since 1947, resulting in injuries to 40 fire fighters, three of whom were hospitalized, and death to a 60-year-old watchman.

New York fights worst fire in decade—borough call sounded. Fifteen factory buildings, tenements and rooming houses were destroyed or damaged when fire of unknown origin in an old car barn used as a paper box warehouse spread out of control June 30. Watchman was killed, many fire fighters treated for minor injuries. Loss exceeds $1 million.

The raging blaze in an old two-story warehouse in the Greenpoint section of Brooklyn, destroyed or damaged fifteen factory buildings and frame tenements and resulted in the temporary evacuation of over 400 persons from their homes. Forty-two structures were permanently burned out. Property damage is estimated at over $1 million.

The warehouse, which was levelled by the blaze, was built in 1896 by the Brooklyn Rapid Transit Co. as a car barn and covered an area of 130,000 square feet. It measured 150 feet on Manhattan Avenue, 325 feet on Box Street, and 225 on Clay Street. Last September the building was sold to the city for $250,000. The occupants at the time of the fire, Shampain, Citron & Clark, paper box manufacturers, used the old building as a storage for five million boxes. Ironically enough, the company had planned to install sprinklers in the huge warehouse the week of the fire.

The fire, starting from an unknown cause, was discovered simultaneously by a number of persons. Nine workers were in the structure with the watchman, Walter Roble, at the time the fire broke out. Five were carpenters engaged in converting the building into a factory; the others were digging an inside well for use with a hydraulic elevator. One of the latter smelled smoke, came out of the hole, saw cartons burning and carpenters fleeing the place. About that time the daughter of the plant watchman, in her parents' second-floor flat across Manhattan Avenue, heard her father calling for help in the warehouse and looking out the window saw smoke coming from the building. She made a vain effort to enter the building, then appealed for help at a nearby restaurant, but nobody dared venture into the flaming building. Meanwhile, five box and six telephone alarms were received at Brooklyn Fire Alarm Headquarters for the fire which, by the time Engine Company 125, the first due unit arrived, was roaring through the flammable storage.

Firemen were hindered by a high northeast wind which fanned the flames and scattered huge clouds of smoke and sparks over a wide area to start secondary fires.

As the fire spread, hysteria gripped the neighborhood. Eighteen families fled from seven tenements between 28 and 52 Clay Street, racing through backyards as fire seized upon the old frame buildings.

As fire fighters, responding on the multiple alarms, brought heavy streams into play, the roof, then the side walls of the warehouse buckled and collapsed. Streams were directed to cover the many exposures over the wide area, but in spite of this effort, the blaze threatened to take on conflagration proportions as it took hold of the exposed buildings: tenements, some of them unoccupied and boarded up; the old Edwards hotel; the Silcen Paper Co.; Bonder Glass Co. and Judd Valve Co., all on Clay Street; and the Geschwind Foam Rubber Co., on Commercial Street.

Three pieces of fire department equipment narrowly escaped total destruction. The crew of Engine 216, which arrived on the third alarm, had a particularly hard time of it. They located their pumper on Clay Street near the rear of the burning building where flames fed by a backdraft ignited the apparatus. Engines 238 and 212 also were seared.

The acrid smoke given off by the burning boxes and other storage in the structure affected the eyes and lungs of the small army of fire fighters. A store at 1102 Manhattan Avenue was converted into a first-aid station where many of the victims were treated.

The fire resulted in the sounding of the first "interborough" alarm since September 28, 1947, when the Grace Line Pier on the North River burned. Although the Greenpoint fire brought men and equipment equivalent to eight alarms, technically there are no alarms higher than five in the New York City Fire Department. Next is a borough call, which includes the five alarms from the borough in which the fire is located, and a three-alarm assignment from another borough. The borough call is used generally, because multiple fire forces can get to a fire in one borough quicker from another borough than they can be mobilized from the same bor-

Walls crash during Brooklyn warehouse blaze. Firemen struggle to control hand lines as they back away from falling wall of burning warehouse. Note heavy streams used to cover exposures, many of which were ignited by the hot blaze.

ough. Bringing in units from outside the borough also assures greater protection remaining in the borough in which the fire is fought.

The following chronology of movements of men and apparatus will help to clarify this procedure for our readers:

8:43 A.M.—Box 46, Manhattan and Clay. Also six telephone calls and Boxes 23, 24, 47 and Class 3-47-4 (building box) all of which were not transmitted by the Dispatcher. Box 46 brought Eng. 125 (213), 238, 258 (260); Lad. 106 (119), 115 (163); Chief Culley, 36, Batt., and Chief McGarry, 11 Div.

8:49 A.M.—2-2-46 (second alarm): Eng. 212, 229 (237), 259; Rescue 4; Wat. Tow. 5 and Lad. 146 (124); also Chief Stressler, 35 Batt., Borough Chief Burke and Chief Scanlon and Dep. Chief Wright of the Fire Patrol; also Amb. 2 with Drs. Battaglia, Seley and Archer.

8:50 A.M.—3-3-46: Eng. 221, 216 (209), 261 (312), 206 (281); Lad. 128; Chief Miller; Fuel 14; Canteen 94; Super. Engr. Irwin; Chief of Department Peter Loftus; Chief Thomas O'Brien Charge Fire Alarm Telegraph; and Chief Fire Marshal Scott.

8:53 A.M.—4-4-46 Eng. 211 (256), 230 (217), 11* (28), 15; Chief Higginson Supt. of Shops; Chief Conway and Chief Guinee.

9:02 A.M.—5-5-46: Eng. 325, 218* (277), 210 (208); 55*; Chaplains Yeager and Brown, Commissioner Grumet; Dep. Commissioner Pacetta.

9:05 A.M.—9-46-6 (for additional water tower) by Chief McGarry.

9:16 A.M.—Box 45 for roof fires at Manhattan and Freeman: Eng. 260 for Eng. 258, 213* for 215; Lad. 119 for 106, and 163* for 115; Chief Reilly 45 Batt. Chief Loftus ordered Eng. 213* and 260 and Lad. 163 to the big blaze. Chief P. J. Connelly rolled.

9:17 A. M.—Borough call for a third alarm assignment from Manhattan Borough, Box 277 at Clinton and Delancey Streets at the entrance of the Williamsburg Bridge. The Brooklyn signal was: 7-7—47—66—3-3—277. This call summoned the following: 1st alarm: Eng. 17, 15#, 11* (21); 2nd alarm: 55*#, 9, 28#, 33 (72); 3rd alarm: Eng. 13, 12* (205*), 31 (203), 5 (44), 30 (26*).

9:19 A.M.—Special calls for Manhattan's Eng. 7*, 32, 27*.

9:31 A.M.—Chief Loftus asked for three additional ladders and a water tower from Manhattan to Box 24 Franklin and Dupont, Brooklyn. Dispatched were Lads. 2, 3, 24 and Wat. Tow. 2.

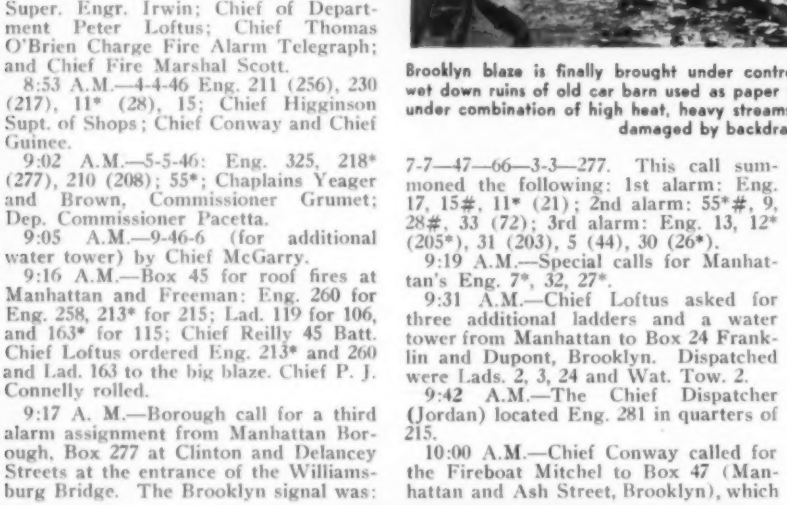
9:42 A.M.—The Chief Dispatcher (Jordan) located Eng. 281 in quarters of 215.

10:00 A.M.—Chief Conway called for the Fireboat Mitchel to Box 47 (Manhattan and Ash Street, Brooklyn), which brought Marine Div. Chief Holian, and Act. Chief Baher, 25 Batt. The Fireboat Willett transferred from its own berth to locate at the quarters of the Mitchel.

The busy staff at Brooklyn Fire Alarm Headquarters which handled these complicated operations included: John Madden, Supervisor; Jos. Turley, John Allen, Morris Heitowit, Nils Falk and Capt. Dan Farren. The telephone operator was Paul Johns. Practically all additional alarms were by radio, marking the first time in the history of the Department that radio was so employed. The local telephone company provided two emergency units in case they were needed.

In action—31 pumpers, 8 ladders, 3 towers, one rescue, one fireboat and numerous miscellaneous equipment.

Brooklyn blaze is finally brought under control. Fire fighters in shadow of shattered walls, wet down ruins of old car barn used as paper warehouse. Walls of ancient structure collapsed under combination of high heat, heavy streams of water and high wind. Three pumpers were damaged by backdrafts and radiated heat.



Bird's-eye view of threatening Brooklyn blaze. Thirty-one pumpers, eight ladders, three water towers, one rescue unit and one fireboat, in all manned by over 200 firemen, fought nine hours to control a hot blaze that threatened a section of Brooklyn on June 30, when fire engulfed hugh warehouse loaded with boxes. Action shows large streams from tower and deck pipes in operation. All hydrants over a wide area were used.

Legend: ( ) denotes relocating company; # not in—unable to respond at the time; * indicates companies which have been scheduled to be disbanded, in the Report of the Mayor's Investigating Committee.

Acknowledgement: Appreciation is extended the New York Fire Department and Correspondent Jerry Daly for assistance in the preparation of this account.

Sterling Fights "3-Alarmer"

Fire, seriously damaged the McDonnell's roadhouse on Valley road, Sterling, N. J., on the night of May 5th, last. Only the hard work of the Sterling Fire Company, led by Chief Daniel Cerulli, aided by fire fighters from Berkelely Heights and Millington, held losses to a minimum.

Passing motorists discovered the blaze. Their shouts, and blasting of their horns, alerted a customer at the bar, who managed to transmit an alarm before the telephone wires burned through.

Sterling, first to arrive, managed to save part of the structure. Three lines were laid from the nearest hydrant, 75 ft. away, while other lines were put in play by the aiding companies, responding on the calls for aid. John McDonnell, the owner, estimated his loss at over $30,000.

OLD FIRE ENGINES NEVER DIE— THEY MERELY FADE AWAY

Some Practical Hints and Helps on the Modern "Beauty Treatment" for Today's and Yesterday's Apparatus

By Charles R. Roever*

FROM the days of the earliest hand pumpers and hose reels it has been a tradition to dress up fire apparatus and to keep it bright and shining. True, the fashions in apparatus are somewhat more conservative today than they were in the times before the fire horse—at least so far as their exterior motifs go, but there has been no concession to utility or anything else when it comes to the gleaming enamel finish and striping of the modern streamlined vehicle.

Who can say that this modern coat is any less attractive than the old dress merely because it is sprayed on, whereas the old finish was hand-rubbed? Who can say that modern chromium finish and trim is less attractive than the good old brass? Who will say that present-day gold striping and lettering is any less artistic than that of those early days, merely because it is less ornate? Who will say that, at least in the field of volunteer firemen, there is any lesser appreciation of fire apparatus simply because designers and builders of current fire apparatus have concentrated on utility and service first and, after that, appearance, whereas in olden days of the red shirts and the side-brake pumpers, appearance got the nod?

A considerable amount of time, effort and expense enter into the beautification of today's fire apparatus. The volunteer as well as the professional fireman knows the psychology of dressing up his fire rigs, and of maintaining that smart, attractive exterior, come what may to the rest of the vehicle.

As one chief officer said: "You can't tell the ability of a fire company to fight fire merely by looking at its apparatus—but you can get a pretty good idea. Show me a sloppy looking, unkempt piece of apparatus and I'll gamble you'll see sloppy and unkempt firemen. Further, if apparatus and men are sloppy and unkempt, you can bet the company does a sloppy, careless job of fire fighting."

Perhaps our friend was a bit pessimistic, but it is a fact that even the finest finish on the finest apparatus will not care for itself. Somebody has to do the grooming. Somebody has to take an interest in the apparatus appearance, and wield the sponge, chamois and soap. If nobody does it, the high lustre finish will dim and the lettering and striping disappear.

This isn't always easy in the volunteer fire department where it is more difficult to get a crew to work on the cleaning up of a dirty fire truck than it is to get a crew to work on cleaning up a fire. "Committee work" in a paid department is just one of those things—the regular routine, dictated by departmental rules and regulations. But not many volunteer fire company regulations (by-laws) include provision for maintenance and upkeep.

Red is the prevailing finish for fire department vehicles. And of all the coatings that can be applied to fire apparatus, red is about the worst when it comes to standing up under the heat of the sun, the cold of winter, and the carelessness of caretakers.

No matter what the exterior trim and finish, careless maintenance will hasten deterioration of not only the body covering, but of the very metals and materials under the paint. A sign of deterioration is fading. The main causes of fading are sunlight and improper cleaning methods, or a combination of both.

When apparatus is new, the finish is easily affected until it becomes hardened, and washing for the first few months is very important. Perhaps we should qualify that and say proper washing is paramount. Frequent washing with lots of cool, clear water hardens the paint and keeps it from spotting. The treatment given the apparatus during this period will make a big difference in the life of the finish and, although waxing is important to prevent scratches and fading of the color, the finish must be thoroughly seasoned before it may be waxed. This seasoning may take four months, or even longer.

Apparatus should never be washed in the sun or while the hood is hot. The effect is the same as washing with hot water; it quickly dulls and cracks the finish. Soap, as well as hot water, has a tendency to dull the finish and remove wax from the surface.

Mud should never be rubbed off. Instead, it should be soaked off with plenty of water and loosened with a sponge. According to most experts, tempered water may be used on the body in cold weather and under the fenders at any time.

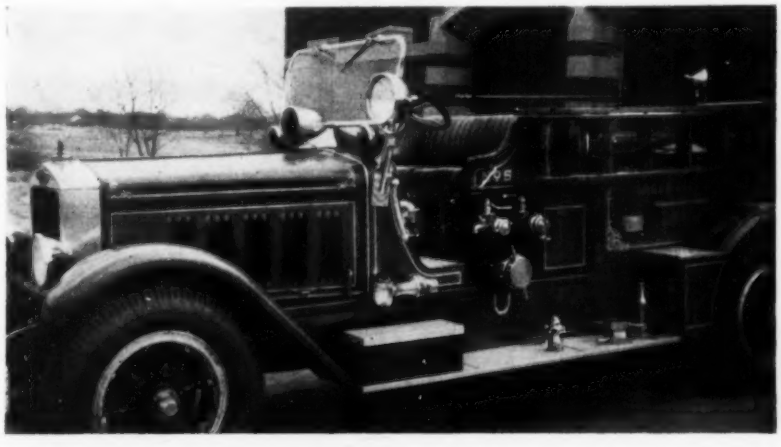
When the apparatus is exceptionally dirty all over, it may be necessary to use a mild detergent, preferably with a linseed oil base. Grease may be tackled with a detergent and water. It is good practice to keep a can of tar remover on hand for removing tar spots (an operation that takes a bit of doing).

There is a technique in using water as a wash. Very little pressure should be used when washing with a hose, as water under pressure can drive the grit and dirt into the finish, or it may enter under the hood to get on the "machinery" and do injury. For this reason it is better to use a sponge and not turn the hose upon the hood. For drying, it is preferable to use a clean chamois or soft towel, frequently wrung out in clean water (that last is important: there are varying definitions of what is "clean").

If the apparatus is dirty, or if dust is the least bit heavy, the finish should always be washed and not wiped with a dry rag as is practiced by some slapdash "artists." Dirt and mud are abrasive and will therefore scratch or dull the finish, especially during the first few months. For ordinary, light dusting, a soft rag is preferable to a feather duster and will reach into places where a feather duster can not. Mud should be washed off apparatus as soon as possible and not left on until it dries hard, in which event it is almost certain to remove or dim the luster of the finish.

A rather common failing in some fire departments is to locate the apparatus on the apparatus floor, too near the doors through which bright sun may center on it. The same sun coming through a window day after day will have a bad effect on the finish. Incidentally, the nearer the doors the apparatus is placed, the more difficult it is to start the motor in winter. Most drivers know the answer to that one. By the same token, such locations may be bad for the appearance of the vehicle. Grit and mud are the chief causes of wear in fire apparatus running gear. If the equipment is cleaned after every

(*Continued on page 725*)



This 20-year-old pumper of the Garden City, L. I., Fire Department is a "shining example" of how apparatus of earlier vintage can be maintained.

*The author desires to acknowledge the helpful assistance of the Garden City and other Long Island fire departments, and the manufacturers of fire apparatus.

Most Costly Fire in Years

The largest and costliest fire in West Virginia's history, and one of the most destructive fires to the nation's economy, occurred on July 10 when a construction company, a fabricating company and a warehouse loaded with rubber and other war stocks on the southwest outskirts of Clarksburg, W. Va. (just outside the city limits) were damaged or destroyed. The unofficial loss is set at not in excess of $10 million.

In its destructiveness, the blaze was reminiscent of the famous Fall River Rubber fire, which wiped out an estimated 10 per cent of the nation's crude rubber supply. Just how much of the country's defense stock pile went up in the more recent huge column of smoke and flame may never be known.

Origin of the fire, which raged out of control for nine hours is not determined. It was reported first noticed by Alfred Painer, a maintenance employee, who turned in an alarm and attempted to fight the blaze with hand extinguishers, but it spread to the rafters of the warehouse and got beyond him. He not only called the Clarksburg Fire Department, nearest to the scene, but put in alarms to Stonewood, Birdgeport, Anmoore, Shinnston and the Nutter Fort Fire Departments.

The fire began in the General Storage Co. building, in which was reportedly stored over 10,000 tons of crude rubber. It quickly spread to the Keeley Construction Co. buildings, and in the opposite direction to the Mountain State Fabricating Co., all of which concerns are located across the West Fork River from the new Veterans Administration Hospital, on a four-and-a-half acre site bounded on two sides by the West Fork River and U. S. Route 19 and State Route 25.

Part of the site was once occupied by the Owens-Illinois Glass Co. More recently the brick buildings have been used by the fabricating company, new additions having been added. The Keeley Construction Co. owned the structures used by General Storage Co. and the Mountain State Fabricating Co. The one-story buildings of all three companies were mostly of brick, concrete and steel construction and were compactly grouped in the area. One official said the storage plant alone covered at least three acres.

Preliminary estimates indicate there were 32 carloads of Zerex, an antifreeze, stored in the building, as well as 100 carloads of crude rubber, and 20,000 cases of canned milk.

Cans of paint and lacquer used by the company exploded during the fire, the firemen being threatened at times by the flaming liquids spewing into the air.

Chief Joe Martin of the Clarksburg Fire Department directed the fire control operations. The out-of-city location of the blaze, together with the absence of immediately available water supplies, complicated and hindered efforts of the Clarksburg and ten other departments in fire fighting operations. The nearest available water was West Fork River, separating the industrial area from the big Veterans Hospital, which has its own Fire Department. This crew, among the first at the scene, had to withdraw at the height of the fire in order to stretch protecting lines to cover the hospital.

Assistant State Fire Marshal Harry C. Morrison listed the fire forces that operated at the scene as follows: Bridgeport, Stonewood, Lumberport Nutter Fort, Shinnston, Clarksburg, Anmoore, Salem, Belington, Lost Creek, Westover and Fairmont.

Burning rubber became fluid and spread all over the area, according to Chief Martin.

Only one fireman was hospitalized, for a nose injury, although several suffered minor hurts. The fire was reported under control at 9:00 P. M. but was expected to burn for several days.

Aerial view of fire, which involved the General Storage Company and the Mountain State Fabricating Company near Clarksburg, W. Va., when it was at its height.

Rice Lake, Wis., Proud of Radio

Radio Station KSC407, operating on a wave length of 39.42 megacycles, went on the air last December bringing joy to Chief I. O. Reiten and the officers and members of the Rice Lake, Wis., Fire Department.

Chief I. O. Reiten and Driver Leo Tinney out on a fire call receive a message over their two-way radio.

Although sharing the radio frequency with the Police Department, the installation has already demonstrated its value to the fire fighters. The equipment for the two-way system at present includes a central transmitting station in the fire hall office, a mobile unit in one city fire truck and another in one police squad car. Still to be delivered is a larger unit to be installed on the rural fire truck.

The cost of this latter unit will be shared by the four townships, Oak Grove, Rice Lake, Doyle and Cedar Lake which own the fire truck jointly with the City of Rice Lake.

The system permits a communications tie-in with the sheriff's offices of Barron, Washburn, Jackson and Polk Counties and city police in Eau Claire, Chetek and Menominie.

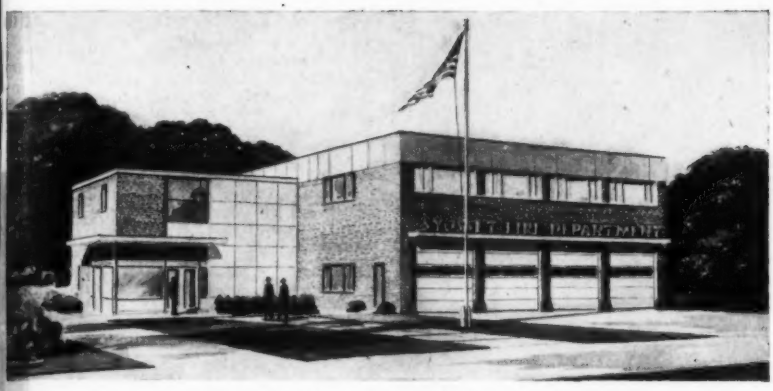
It is reported that the Rice Lake Station is the only one operating presently on a 24-hour basis between Superior and Chippewa Falls. The cost of the system was $2,733.16, $500 of which was raised at a circus sponsored by the two services.

In 1951 the Rice Lake Vouunteer Fire Department answered 60 calls. The fire loss was only $1,996.55. The Department was called five times to neighboring communities.

Drought Increases Fire Hazards

The four drought stricken States of Alabama, Georgia, Kentucky and Mississippi were designated disaster areas by the Department of Agriculture on July 31st, last, as a month-long dry spell continued, and after the Weather Bureau declared that in the southern and eastern sections of the country "crops are deteriorating, wells and ponds are drying up and a serious fire hazard exists."

New England States also were hard hit. Numerous brush and forest fires in Maine, Massachusetts and Rhode Island gave fire fighters plenty of work. In parts of New York, July was the hottest, driest month in the history of the weather department.



Architect's drawing of new fire station, Syosset, L. I., N. Y.

Syosset's New Station

One of the most modern and attractive of the new fire stations to grace Long Island's fire service is that of the Syosset Fire Department, Syosset.

From the exterior one notices the large amount of glass that has gone into the construction; the modernistic treatment of brick and other materials. It is a four-door station, with an apparatus floor measuring 52 ft. by 64 ft. over an unexcavated basement. The balance of the building is over a basement recreation room of about 18 by 40 ft. There is also a boiler room in the basement.

The first floor contains the apparatus room, lobby and entrance, and behind these, a large company room with officers' and dispatchers' quarters. The dispatchers' office, size 11 x 14 ft., and a large store room, complete this floor layout. The second floor has a large assembly room as large as the apparatus floor together with offices for commissioners, checkrooms and toilets, and a large kitchen and storeroom.

The architect is W. Thomas Schaardt, A. I. A., Meadowbrook Bldg., Sunrise Highway, Bellmore, N. Y.

Firemen of 13 Departments Fight Lumber Yard Blaze

A force of 300 firemen, from 13 fire departments, fought a stubborn blaze in the warehouse of Logan Lumber Co., Tarentum, Pa., for eight hours before it was controlled. The spectacular fire, which caused loss estimated at $400,000, started at 10:45 P.M., April 29, last, and for two hours raged out of control, flames leaping high in the air from the Logan building roof. It was not until 1:30 P.M. that firemen gained the upper hand. By 3:00 A.M. danger to exposures was past.

The Logan planning mill and lumber storage is located almost in the center of the town of 10,000 people, on the Allegheny River, 22 miles north of Pittsburgh. The lumber storage is at the westerly end of the property. The office building, a 2-story brick, 40x60 ft. structure, also contained paint storage. Outdoor storage and office building were separated from the mill and indoor storage by an old L-shaped, 2-story frame structure and a 2-story brick residence housing a feed store and wholesale company. The type of construction, storage and layout of property were a perfect set-up for a conflagration.

The fire was discovered by a pedestrian, who saw smoke coming out of a 10 ft. door on the Allegheny street side of the main building. He pulled Box 23, corner Third and Allegheny, at 10:20 P.M., which sounded a general alarm, calling all three Tarentum volunteer companies—No. 1 having a combination Ahrens-Fox ladder and pumper truck (1,000 G.P.M.) and squad car; No. 2, Seagrave combination hose and pumper (1,250 G.P.M.) and No. 3, Seagrave combination hose-pumper (1,000 G.P.M.).

No. 2 apparatus arrived first with 10 men under Fire Chief Esler W. Hayes and Asst. Chief Robert Schrecker, at 10.23 P.M., followed soon after by No. 1 and No. 3, the latter arriving at 10:28 P.M. Lines were laid by No. 2 to the entrance of the sawdust bin, to the front of the building by No. 1, which also laddered the building, and to the roof of the Toepfer Feed Store. Lines later were stretched under the railroad tracks to the rear of the burning building, over the box cars on the railroad.

At 10:40, the large sawdust suction pump on the roof fell in to the first floor as ladders with lines were placed in operation. Fire Chief Hays immediately ordered the Mutual Aid plan of the Allegheny Valley Volunteer Firemens Association activated and at successive intervals of about 10 minutes the following companies rolled in to the area: Pioneer Hose Company, Brackenridge; Natrona No. 1, which hooked its line onto Tarentum No. 2; East Deer Township; Cheswick Borough; Springdale Borough and Hilltop Hose Company of Harrison Township.

By 11:30 P.M., sixteen 2½-in. hose lines were pouring water into the burning building. But it was evident that even this force could not extinguish the fire, although it could confine it. Chief Hays thereupon requested aid from the City of New Kensington Fire Department, fire miles distance on the other side of the River. He asked Chief Clawson of that department to bring a deluge gun with men to operate it, none of the initially responding forces having any such equipment. Chief Clawson responded promptly with 29 men and the deluge set. The pumper of the East Deer Fire Department operated a line about 800 ft. in length to supply this gun, placed to the roof of the Toepfer Building, with 1¼ in. nozzle, operating at 250 P.S.I. This additional strength quickly beat down the fire and by 3:30 A.M. the 30th, aiding companies began to pick up. Water was continued thrown on the stacked lumber until 10:00 A.M. that day at which time Asst. Chief Schrecker ordered all but six lines withdrawn. These lines were in use continually to kill the outbreaks in the stored lumber. The fire was officially declared out by 2:00 P.M. on the 30th, although charged lines were maintained as standby until the following day.

In spite of the many men engaged in the operation, injuries were few. The most serious occurred to George Stauffer, of Tarentum No. 2, who was struck by the beam of a pike pole, breaking

Fifteen departments confine threatening Tarentum Lumber Yard fire.
Mutual aid, and an adequate water supply, combined with good fire fighting operations, successfully controlled a serious fire in the Logan Lumber mill, Tarentum, Pa., which threatened a large area. Picture shows fire-gutted structure and exposures.

Modern fire station recently built at Alpena, Mich.

his glasses. A sliver of glass penetrated an eye, resulting in possible loss of sight. One man was hurt when he slipped and fell from a ladder. A few others suffered burns.

Officials attribute the speedy response of units under the mutual aid plan and the ample water supplies with preventing a possible conflagration. During the height of the blaze firemen with Indian pumps patrolled the roofs of exposed buildings to extinguish burning embers.

The total responding units were as follows: Tarentum, 3; Brackenridge, Pioneer Hose Co.; Natrona No. 1; Hilltop Hose Co.; Citizens Hose Co. of Harrison Twp.; Springdale Fire Department; Cheswick Fire Department; East Deer; Fawn Twp. Fire Department and New Kensington Fire Department. Lower Burrell Fire Department located at No. 2 Tarentum station and the City of Arnold Fire Department, 7 miles away across the River remained on the alert for ten hours.

Acknowledgement: The editors are grateful for the excellent report of this fire submitted by Esler W. Hays, Chief, Eureka Hose Co. No. 2, Tarentum, Pa.

New Fire Station for Alpena

The fire station shown herewith is so located that it has easy access to several areas of the City of Alpena, Mich., to provide quicker and better fire protection. The dormitory, locker rooms, and toilets are so located to provide the maximum amount of privacy.

The outside walls are of 12-inch concrete, and interior partitions are of 8-inch light-weight, or Waylite blocks. Floors are of poured concrete, covered with asphalt tile in the lounge, toilet, alarm room, dormitory, and kitchen. Roof construction is of Soffit tile, with two and one-half inches of reinforced concrete covered with 1-inch rigid installation and 4-ply built up roofing. Aluminum double hung windows provide light for both wings. The apparatus room is higher than the balance of the quarters and has glass block panels which provide sufficient light for the apparatus room. This additional height also provides adequate ventilation.

Heating is provided in the apparatus room by a radiant heating system, and other rooms are equipped with baseboard radiation. Circul-Air hose driers are in use in this modern structure.

This building was designed by the Scott Engineering Company, of Alpena, and was constructed by the City employes at an approximate cost of $35,000.

This building is compact in size. It has ample room for a pumper and a ladder truck. It has dining and kitchen facilities, a workshop, a six-bed dormitory, lounge, alarm room, toilet room, and separate boiler room. Franklin C. McKim is Chief of the Alpena Fire Department.

Cooperation Pays Off!

It's difficult to say who is prouder of the new three-door fire station of the Conway Village Fire District's Fire Department: the good people of the community or the vamps of the three Conway companies.

With visions of what fire and storm might do to the old over-crowded fire house, the citizens at a precinct meeting voted to raise and appropriate $11,000 for a new, more adequate building.

Measured by today's cost-of-living, $11,000 wouldn't go very far. But the volunteers, together with public spirited citizens, stretched that figure out so that today the Department is snug in a modern, fireproof house that couldn't be duplicated for $20,000.

Public-spirited citizens contributed time, labor and money, and members of the three volunteer fire companies, sparked by their Chief, Glenn H. Hale, provided the labor for the building construction, working their leisure hours, and often far into the night.

The building itself is of cinder block construction, resting on cement foundation. The front is faced with brick and its three doors permit quick response of any or all of the three pieces of apparatus of the Department. At each end of the structure and between doors are decorative lights. Over the doors, across the front of the building stainless steel letters blazon the name "Conway Fire Department."

Inside, the apparatus floor, measuring 40 x 60 feet, is entirely unobstructed by supporting pillars. The walls are painted two tones of light green and the lighting is all by fluorescent fixtures recessed into the ceiling. To the rear is space for drying hose, washrooms and toilets, and boiler room, the latter entirely separated from the main building, with outside entrance, for greater safety. Hose racks for reserve hose and suitable desk and telephone facilities complete the interior.

A feature is the method of heating the cement apron in front of the station. Hot water pipes are carried just beneath the surface of the concrete for melting the winter snow as fast as it falls.

I.M.S.A. to Meet Sept. 29-Oct. 2

The 57th Annual Convention of the International Municipal Signal Association will be held at Hotel Statler, Boston, Mass., September 29-October 2, 1952. A. L. O'Banion, Supt. Fire Alarm Division, Boston Fire Dept. is general chairman.

A complete technical program has been arranged covering the various phases of municipal signaling work: fire alarm, traffic signals, police signals, radio communications, street and other outdoor lighting, Civil Defense, etc. Authorities will address the convention on each subject and there will be many panel discussions in which members will participate.

Exhibits are one of the big features of the IMSA Convention. Leading manufacturers of municipal signaling equipment will display equipment and sales engineers from the different companies will be on hand to give the latest information.

Further information on the convention may be secured from the IMSA Secretary's office: 130 West Forty-Second Street, New York 36, N. Y.

New fire station at Conway, N. H.

Newton Rally Proves Good Public Relations

"Here they come with their axes," is a cry of derision which usually offends fire fighters. That's the way an article in the Boston Traveler started off, after which it went on to laud Newton, Mass., firemen for "axe work" that was greatly admired by all who witnessed or heard of it.

The "axe work" came one day last April, at the site of a fire which two weeks before, had almost wiped out the Salvation Army summer camp in Oak Hill. Some of the men who responded to that multiple alarm blaze of April 14 at the hidden camp on Puddingstone lane, near the West Roxbury line, were among the axe-wielders at the subsequent gathering. They remembered the devastation left by the slow burning fire which destroyed the kitchen facilities and equipment of the camp. So it was, two weeks later, they returned, with comrades, to the scene of the original blaze on their own time, and spent a day clearing away tottering walls, toppling chimneys and sagging roofs, to pave the way for reconstruction.

"We have learned through the Salvation Army that unless the burned portion of the building is torn down and work on reconstrutcion started immediately, vacation for the kids of the crowded districts of Boston won't materialize this year." That's what Fireman Elliot McClelland of Engine 3, in charge of the project, said in justification of the enterprise. He never expected the response he got when he posted a plea, at all fire stations for fellow fire fighters to go out and do the wrecking job.

In response to the urge to do something for the city kids, who wouldn't get a chance for surcease from the city's sweltering summer streets if the camp wasn't rebuilt, the firemen swarmed to the scene. They came in cars, on an ancient hook-and-ladder truck and on city trucks. They swarmed all over the burned-out ell, swinging axes, yanking at pull down hooks and pike poles, and hauling on ropes. In less than two hours the area was leveled.

The blueshirts were too busy to see that watching them intently and waiting to serve coffee were two women from the Salvation Army. Major Gertrude Atkinson estimated it will cost about $14,000 for repair work—and wondered where the money would come from. But she declared, even without all the facilities, the children are going to the camp, if they have to eat and sleep on the grass. She looked around at the busy firemen and added "All things work together for good. We're going to build our hopes on that."

New Natchez, Miss., rescue truck.

Natchez Rescue Truck Has Iron Lungs and Boats

The Natchez, Miss., Fire Department is proud of its emergency-rescue unit. Its truck is equipped with two Iron Lungs donated by the local Veterans of Foreign Wars Post. It also has six 500-candlepower flood lights donated by Woodville, Miss., and a Kohler power unit which has proved useful upon numerous occasions for providing lights to local hospitals. There are grappling hooks and drags for drowning cases and two boats carried on a trailer for use when and if required. There is also a complete modern first aid medical kit.

Each man in the department has completed an advanced course in First Aid and off-duty men man the truck on all out-of-town calls. The unit responds to neighboring Mississippi and Louisiana towns on emergency calls.

Last year the outfit recovered 12 of 13 drowned persons. It saved an infant by use of one of its Iron Lungs and it rendered first aid to some 100 persons, according to Captain George Stinespring who heads the unit. The Captain, incidentally, writes that he would like to correspond with other FIRE ENGINEERINNG readers interested in mutual aid, and emergency apparatus.

Firemen of Newton, Mass., on their own time mobilize to clean up ruins of a fire that previously wrecked a Salvation Army camp for city kids, so that youngsters may have surcease from the city's sweltering streets.

Monroe County Gets Radio

Fifty, two-way radios will be installed in Monroe County, N. Y., to serve the County's volunteer firemen. The equipment, now on order of Motorola, will furnish each of the 56 volunteer fire companies with at least one set. Volunteers in Penfield, Brighton (scene of the natural gas explosion), Chili, Greece-Ridge and Ridge-Culver already have one or more two-way sets. The latter departments will be reimbursed for one unit each out of the Association's $25,000 fund donated by the Eastman Kodak Company for help during the blaze at Kodak Park.

The new equipment represents merely a start toward adequate radio equipment, according to Joseph B. Kuhn, Penfield Fire Chief. The only company outside the Monroe County group to participate is the Industry Fire department. Industry has frequently helped out the companies within the association and therefore was voted a radio set bought with Association funds.

Rules Department Can Travel "Wrong Way" on One Way Street

Fire Chief Edward Gall, Sr., of the Mount Vernon, N. Y. Fire Department, like many of his fellow fire fighters, has been bothered with the problem of his fire apparatus running against one-way traffic. So he asked the city's Corporation Counsel Harry Zimerman for a legal opinion. As a result, the department's difficulties on this score apparently have been ironed out.

Mr. Zimmerman has ruled that fire apparatus responding to alarms may proceed against traffic on one-way streets, basing his opinion on Sec. 82 of the N. Y. State Vehicle and Traffic Law, which provides that U. S. Mail, police, fire, fire patrol and ambulances have the right of way when moving in performance of duty. The law however, does not relieve the owner or driver from liability for injuries in case of careless exercise of the right.

Ten County Fire Companies Fight Railroad Crash Fire

On the night of May 10, 1952, the Town of College Park, Md., (ten miles north of Washington, D. C., and the home of the Maryland Fire School) was treated to a spectacular freight train derailment and fire, which taxed the combined efforts of many volunteer fire fighters.

The center sill of the 37th car of a 97-car B. & O. freight train broke, dropping on the rails, tearing up about 400 feet of track and derailing 21 cars.

Two cars of naphtha and one car of petroleum started to burn immediately and it required ten Prince Georges County (Md.) fire companies, all volunteers, over five hours to control the resulting blaze.

Five and one-half tons of chemical foam were required before the blaze was controlled. After the foam supply was exhausted, fog streams were resorted to and it took approximately seven hours before the last flames were extinguished.

Accordingly to Fire Chief Donald S. Kimball, of the Branchville Volunteer Fire Company No. 1, the officer in charge, it was an extremely difficult fire to fight. The cars were piled one upon another, and it was impossible for either foam or fog to completely blanket or smother the burning petroleum and naphtha. After five hours, the fire was finally beaten down, then the liquids, escaping from the punctured cars, were flushed into a lake, which bordered the wreck, by fog and hose streams.

The schooling given the fire fighters of the area call for using either fog or foam to fight large oil fires. But it was difficult to use either with full effect in this instance, according to Chief Kimball, because of the stacked-up condition of the wreckage. The extinguishing agents could not be brought to bear on the fire under the cars, and in inaccessible places.

After the fire was finally knocked out, it was necessary to keep numerous hose streams on the wrecked cars to run the oil from the railroad roadbed into the adjoining lake.

Four firemen were injured in the operation, none seriously. Baltimore & Ohio representatives set the loss at between $50,000 and $100,000.

Fire companies 11 and 12 were on the scene 14 hours and in the next 48 hours were recalled three times to extinguish small fires set by the wrecking company crews' tools. These two units are the representative companies of College Park, Maryland.

Through mutual aid, the District of Columbia (Washington) sent a truck load of foam, the Washington Gas Light Company sent 1,450 pounds of CO_2 and the Naval Ordnance Laboratory sent powdered foam.

Here is the chronology of calls:

May 10, 11:06 P.M.—Companies 11 (two pumpers and two ambulances); 12 (three pumpers and one squad); 14 (one pumper, one squad).

11:10 P.M.—7 (two pumpers); 13, (two pumpers); 1 (four pumpers); 31 (one pumper, one ambulance).

11:15 P.M.—28 (one CO_2 Truck).

May 11, 12:01 A.M.—2 (two pumpers, one ladder).

12:08 A.M.—District of Columbia Foam Truck.

12:30 A.M.—Naval Ordnance Laboratory Foam Truck.

2:54 A.M.—10 (one pumper with foam).

3:00 A.M.—Washington Gas Light Company with 1,450 lbs. of CO_2.

Fill-ins were as follows: 11:38 P.M., Eng. 3 to 1; 11:45 P.M., Eng. 9 to 12; 12:52 A.M., Eng. 8 to 2; 1:35 A.M., Eng. 5 to 13; 1:45 A.M., Eng. 22 to 11; 2:45 A.M., Ambulance 99 to fill in for ambulances 118 and 119.

There were 26 pieces of equipment and 208 men on this fire. The ladies' auxiliaries of all participating companies served hot coffee, sandwiches and donuts throughout the night.

Acknowledgement: The editors are indebted to Chief Donald S. Kimball, Branchville Fire Co. No. 1, for the information upon which this account is based.

Volunteer firemen bring train wreck fire under control at College Station.

Blaze Sweeps College Building

Damage estimated at more than $75,000 was caused by fire which raced through the two upper floors of the main campus building at Arnold College, Milford, Conn., on May 12. Eight members of the Milford Fire Department were injured fighting the three-alarm blaze.

Scene during fire that raced through Arnold College, Milford, Conn., on May 12, and caused damage estimated at over $75,000. Eight firemen were injured fighting the three-alarm fire.

The fire, believed by fire officials to have started from a carelessly tossed cigarette while several students were playing cards in one of the fourth-floor rooms, gutted the entire top floor of the concrete and steel building, causing part of the slate roof to cave in. The third floor, housing several classrooms and the college infirmary, also was burned extensively.

Heavy smoke and water damage caused considerable loss in the second floor library and classrooms, and in the auditorium and laboratories on the ground floor. The college was erected in 1886 and was formerly the Schermerhorn Home, an orphanage operated by a New York Episcopal mission.

Arnold College took over the building in 1947. The school has an enrollment of 223 students, 70 of whom reside on the campus.

The first alarm was sounded at 4:34 P.M. from Box 521; the second alarm was radioed to Headquarters at 4:49 P.M., and the third alarm was received at 5:05 P.M. Recall was at 6:01 P.M. Supervising the operations was Fire Chief Ernest I. Cox and Battalion Chief William Smith.

—Tom Magner.

Joint Civil Defense Amortized

President Truman has signed a bill authorizing the States of New York, New Jersey and Connecticut to make a compact governing joint civil defense action in an emergency. The bill covers the possible coordinated use of the fire services of the States in time of enemy attack or other serious fire threat.

Auxiliary firemen of West New York, N. J.

Organizing the Auxiliaries

In the April, 1952, issue of FIRE ENGINEERING, a reader posed a number of questions concerning the creation and operation of an auxiliary fire force. Another reader of this Journal, George H. Steger, who is chief of auxiliaries, West New York, has submitted an account of how they have done things in his community, which is passed to our readers in capsule form.

When asked to organize the civil defense auxiliary force, Chief Steger first consulted Fire Chief Albert A. Schneider for his suggestions and recommendations. The start was made with the buffs and others who formed the civil defense auxiliary of World War II. Within two weeks, 20 men were recruited and awaiting training. The drillmaster of the fire department was assigned to give the group a complete, extended 24-hour course in firemanship.

This course was spread over a period of about three months and included practically all basic evolutions, visits to local fire stations and so on. Certificates and auxiliary pocket badges were awarded each man completing the course.

Regulation boots, turnout, rubber coats and helmets were secured from the town budget for each man. The men themselves procured their work clothes and dress uniforms. All men were granted accident, hospitalization and death benefits.

Each man was assigned to a fire house and his equipment placed on the apparatus. A minimum of 6 hours per week "on duty" service is required for each member at his assigned house. Attendance data are kept at all fire stations.

Since completion of the original training course, a second session for seven new men was started, and shortly a third session will begin for five more men. At present the auxiliary is taking a 22 hour course in First Aid.

Little by little the Fire Auxiliary is becoming known through their response to fires and through public praise by fire chiefs of the regular department. It is from this source, along with recommendations of the auxiliary members, that applications are received. Each applicant is personally interviewed and investigated. He is told about his duties and no attempt made to minimize hazards or responsibilities. All candidates must measure up, physically and mentally, to imposed requirements.

The auxiliaries have organized their own social organization to promote good fellowship. They view films dealing with firemanship, listen to lecturers and entertain regular firemen as well as the members of the families of the auxiliaries. Memorial church services are attended and the men participate in all affairs of the department, when requested. All in all, here is an Auxiliary Fire Force that appears to meet all the requirements.

Burned Out Light Bulb Causes Fire

Heat from a 1,500 watt electric light bulb recently caused a fire in the basement of a Los Angeles linoleum and paint store. The heat caused the bulb to burn itself out and the globe was cool when firemen arrived.

Someone hung the bulb, attached to an extension cord, over a nail on a supporting timber in a basement. The bulb rested against the timber. The light was turned on at 8 o'clock in the morning in the basement filled with highly flammable paints, linoleum and similar merchandise.

Eight hours later the heat from the bulb ignited the timber and charred it to a depth of two inches. Heat from the bulb and the smoldering timber apparently melted the seal at the base of the bulb and released the vacuum, blowing out the bulb.

At 4 p.m., Friday, May 16, the Westlake Alarm office received a telephone call that smoke could be smelled in the basement of the building at 1000 South Broadway Place.

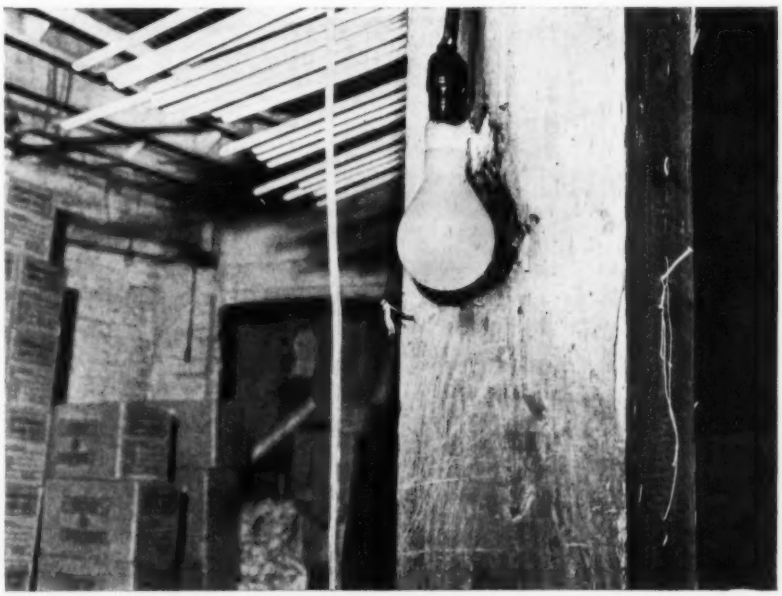
When Acting Fourth Battalion Chief Harold Barkhoff arrived with a full assignment of fire equipment the bulb had already turned cold to the touch. The heat did not even crack the glass globe. The smoldering timber was quickly doused. Chief Barkhoff said there was only nominal damage to the building.

—PAUL C. DETZEL.

Halifax Studies Explosion Hazards

Halifax, Nova Scotia, is very explosion-conscious and has been so since World War One's harbor tragedy. The loading of explosives, which have increased since the beginning of the Korean war, has caused considerable uneasiness among Halifax citizens—whose fears were further intensified by a near-explosion last winter when a ship loaded with ammunition was involved in a minor collision in the harbor.

In an effort to take the necessary precautionary measures to further safeguard the harbor and the city, conferences have been held to discuss the loading of explosives aboard ships. Representatives of the City Council, Port Authority, Naval Authority, shipping interests, organized labor and the shipping committee of the Halifax Board of Trade participated.



Burned out light bulb and charred timbers behind it.

PROCEDURE FOR RECOVERY OF BODIES OF VICTIMS OF DROWNING

Organized Dragging Plan Prevents Failure and Speeds Up Operation

By George B. Johnson
Chief, Lakeland Volunteer Salvage Unit
Cranberry Lake, N. J.

YOUR recent articles on fire department rescue and emergency squads were of great interest to me. In small and large departments alike, the expansion of services along these lines is on the increase.

With the advent of the summer season, our thoughts turn ahead to the possibilities (or should I say probabilities) of drownings. Hardly a week goes by during the summer months when we fail to see a photo or newspaper account of drowning. Body recovery very often becomes a lengthy operation. The main reason, in our opinion, for the great lengths of time required to recover a victim is the lack of a workable recovery system. We have pulled in on jobs where the officer in charge assured us that an area had been thoroughly covered with hooks. From the top, those officers had seen their boats dragging back and forth for hours and had assumed the thorough coverage of the bottom. When our divers go below we find how "thorough" these operations were. Often we find as much as ten feet between the paths of the grapples.

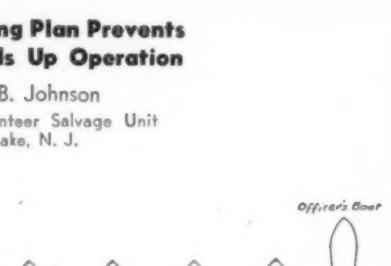
If the initial rush to save a life fails and the operation turns into one of body recovery, the necessity for utmost speed is gone, but equipment and men are still tied up and the victim's relatives stand by anxiously awaiting the recovery.

In an attempt to speed up recovery, I submit the following system which we have used successfully. It eliminates much of the hit and miss aspect of grappling, but as in any operation where you are "working blind" luck still plays an important part.

First, a word on hooks. There are countless types and each officer has his own preference. The choice of hook is largely determined by the type of bottom to be worked. We find that the bar type or cable type are far more effective than the single large gang hook. The size and number of hooks on the bar or cable is also a question of personal choice. Our system is designed to use the bar hooks primarily because a greater area is covered.

Our first step is to send one or two men to find as many eye witnesses as possible. The more the better. It is surprising to find the large amount of discrepancy between these eye witnesses. Our area of search is then set up taking into consideration error of the witnesses, current, etc.

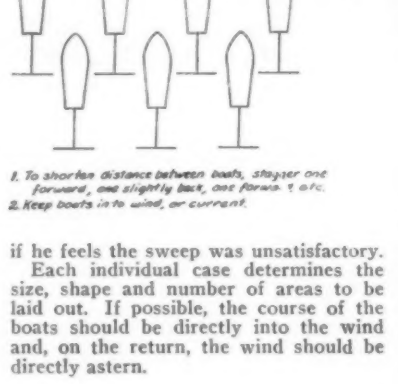
The boats are placed along a line leaving just enough space between for oars. We try to stagger each row, one forward and one back to cut down this space. The next line fills in the space between each boat. The officer in charge keeps his boat slightly off from the grapplers. It is his responsibility to direct a boat back into position or to order a re-sweep



1. To shorten distance between boats, stagger one forward, one slightly back, one forward, etc.
2. Keep boats in to wind, or current.

if he feels the sweep was unsatisfactory.

Each individual case determines the size, shape and number of areas to be laid out. If possible, the course of the boats should be directly into the wind and, on the return, the wind should be directly astern.



I have indicated buoys on my diagram as letters within circles and the different areas by numerals. For the purpose of explanation, only four areas are shown. Any material may be used for markers: cans, inner tubes, life rings, and if the water is shallow enough, poles stuck in the bottom.

The boats start in formation at buoy A and sweep to C. As an extra precaution, we sweep this line again. We then move over for another sweep. When area 1 has been completed, we move to 2 and cover it in the same manner. Then on to 3, etc. If sufficient boats and hooks are available, a similar search can be started in area 4. As an additional precaution we try to slightly overlap the sweeps.

If it becomes necessary to search a larger area, sufficient buoys should be left in place to indicate the area that has been searched. On my diagram, those left would be A, E, I and G.

I have checked the bottom after grappling with this method (double sweep) and found very few instances of "holidays." The effectiveness largely depends on the efficiency of the officer in charge in keeping the boats in position and doubly checking areas where there was haphazard coverage.

We augment this system by the use of divers. When a grappler has a "strike" and loses contact, the diver investigates. He also searches where it is impossible to use hooks (in weeds, among stumps, pilings, around docks, etc.) He is used to free snagged hooks and to check on the effectiveness of the grappling pattern. Although the use of a diver is advantageous, it is not necessary.

Quincy Records Some "Firsts"

When the fire department at Quincy, Ill., put a 1,250 gallon pumper (American LaFrance) into commission, May 1, 1952, it added another "first" to its long record of achievements. The engine, designated as No. 3, was assigned to headquarters, replacing a 25-year-old 1000 gallon pumper (American LaFrance).

Quincy was one of the first cities in Illinois to purchase a fire engine, in 1839. It was an "arm-strong pumper" that required at least eight men to operate the long handles on each side of the crude affair. It was known as the "Water Witch" and is kept on display at the No. 8 station.

Quincy with the first Illinois city to buy a piece of motorized equipment. In 1911 it placed in service a Seagrave combination chemical and hose truck.

Quincy was the first Illinois city to purchase a 1,000 gallon pumper (American LaFrance, bought in 1914).

In 1918 the entire department was completely motorized, making it the first city in Illinois to achieve that record.

In 1940 the department put in service a 100-foot aerial ladder truck (American LaFrance). It is said that no other Illinois department had a ladder of that type in service, at that time. And as far as Chief George Simon can ascertain, no other Illinois city has a 1,250 gallon pumper in service. EARL NOLAN

Mammoth Siren Tested

The world's largest siren, which reportedly equals the noise made by 2,000 symphony orchestras, is now being tested in a remote mountain area near Newhall, Cal., it was announced by University of California, at Los Angeles recently.

UCLA disclosed the 90-foot noise-maker is operated by air fanned from two big Rolls Royce engines. It's loud enough to cause permanent damage to unprotected ears and scientists at the site wear special ear-plugs.

The siren is being tested for the Navy, and some aspects of the research are secret. Thus far, the UCLA report said, the machine has demonstrated that sound waves of high intensity take on the aspects of shock waves after a short time.

Mile Relay in Town Without Blocking Streets

Civil defense planning has given impetus to multiple company operations, with emphasis on relaying.

Some time ago in Montclair, N.J., one of the more attractive of New York's metropolitan suburbs, civil defense officials and the Montclair Fire Department, directed by Fire Chief Arthur W. Bilby, staged a "trial run" relay operation with the objective of instructing auxiliary firemen, and giving the 'regulars' a sort of refresher course, and at the same time testing out the department's facilities under actual operating conditions.

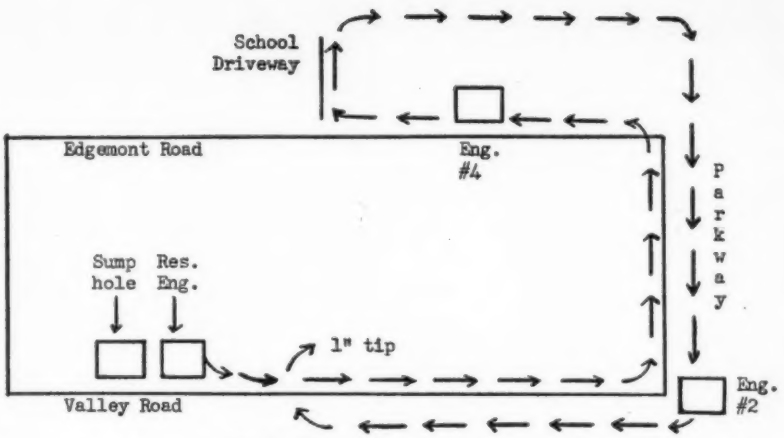
The plan, which was developed by Chief Bilby, Superintendent Theodore MacLachlan, Deputy Chiefs Frasca and Crick, and Assistant Chief Ferrara, with C. D. Director Wm. E. McBratney, contemplated pumping water for approximately one mile, using three pumpers and single lines.

After checking such details as available spare hose, and pumpers, it was decided to use three of the department's regular pumping units, and 5,150 feet of standard 2½-in. hose.

Inasmuch as the department's hose is tested annually at 200 lbs. pressure, it was decided not to build up pressures on any pump materially above this figure.

One of the problems that had to be solved was how to lay out that approximate mile of hose in the town, without tying up traffic or running the risk of causing injuries to the public and possible damage to property as a result of the operation. The answer was found by using a pond in one of the parks as the water source, and locating the pumpers and laying out the hose for the relay in a sort of half-circle within the perimeter of the park itself.

The plan provided the necessary distance for the hose layout without blocking driveways or street intersections. Starting at the sump hole (Edgemont Pond), hose was stretched up the street (Valley Road) to the first corner (Parkway) then left on this thoroughfare to the next corner (Edgemont Rd.), where another left turn was made and hose stretched to a school driveway about half way down the block. This took approximately half a mile of hose. At this point the line was reversed so that it followed itself back to the starting point. Excess hose was laid out at the pump and the nozzle so that the line would have many bends, just as it would under actual emergency conditions.



Sketch showing placement of pumpers.

The three pumpers were placed as follows: at the sump, a 1,000 G.P.M. Mack reserve unit; the second pumper, a 750 G.P.M. Mack (Engine 4), was 2,100 feet distance, level ground, the line rounding two corners. The third pumper (Engine 2) was a 750 G.P.M. Buffalo, also 2,100 ft. on level ground. The line made a complete turn and went around two corners. The distance between the third pumper and the nozzle was 950 ft., level ground and straight-away except for the last 50 ft. In one of the tests the last 950 ft. of hose was broken in half and two lines taken off of the third pumper.

In setting up the operation, Engine 4, with 36 lengths of 2½-in. hose, proceeded to the sump at the Pond, on signal layout up Valley Rd. to Parkway to Edgemont Rd. When all hose was laid out, a Dodge hose truck spliced out 300 additional feet. The line was hooked to the intake side of the pump, whereupon the Dodge stretched 300 ft. from the 2½-in. outlet side of No. 4's pumper. Here Engine 2, with 36 lengths of 2½-in. hose on the rig continued the layout to the Edgemont School North Driveway, where it turned back, continuing the layout, running out of hose at approximately Valley Rd. This line was connected to the intake side of this pumper. The Reserve pumper then laid out from the outlet side of Engine 2, back to the sump hole, after which it was placed in position to draft and connect up with the line left at the sump by Engine 4.

The operation called for building up the pressure on the Reserve pumper to 200 P.S.I. Engine 4's discharge gate was to be open from the start. After Engine 4 got water, and the gauge on the intake side showed at least 18 to 20 lbs., the pressure was to be built up to 200 lbs. Engine 2 also was to have discharge gate open from the start and it was to build up pressure, after it got water and the gauge read 18 to 20 lbs.

Pump operators were instructed to drain pumps when leaving quarters and, at the scene of operations, make sure the 2½-in. line came to the pump on a straight line for a distance of at least 5 ft. It was pointed out in the instructions that the operation was not a time test but rather to develop cooperation and coordination.

The actual results of the trial are shown in the accompanying table.

RESULTS OF TESTS

TEST #1

5150 feet of 2½" hose: Engines were spaced thus: Reserve Engine at sump hole; Engine #4 2100 feet away; Engine #2 2100 feet away from Engine #4; Nozzle 950 feet away from Engine #2.

Tip	Res. Eng (1000 gal.)	Engine #4 (750 gal.)	Engine #2 (750 gal.)	Nozzle
1"	R.P.M. ..... 1600 Pressure ..... 205#	Inc. Pressure.. 20# R.P.M. ..... 1300 Outg. Pressure 205#	Inc. Pressure.. 35# R.P.M. ..... 900 Outg. Pressure 120#	Pressure ..... 40#

TEST #2

Tip	Res. Eng. (1000 gal.)	Engine #4 (750 gal.)	Engine #2 (750 gal.)	Nozzle
1⅛"	R.P.M. ..... 1600 Pressure ..... 200#	Inc. Pressure.. 20# R.P.M. ..... 1300 Outg. Pressure 200#	Inc. Pressure.. 35# R.P.M. ..... 1000 Outg. Pressure 120#	Pressure ..... 30#

TEST #3

5150 feet of 2½" hose: Engines were spaced thus: Reserve Engine at sump hole; Engine #4 2100 feet away; Engine #2 2100 feet away from Engine #4; two lines approximately 450 feet from Engine #2 laid with one ¾" tip and one ⅞" tip.

Tips	Res. Eng. (1000 gal.)	Engine #4 (750 gal.)	Engine #2 (750 gal.)	Nozzle
⅞"	R.P.M. ..... 1600 Pressure ..... 200#	Inc. Pressure.. 35# R.P.M. ..... 1300 Outg. Pressure 200#	Inc. Pressure.. 32# R.P.M. ..... 950 Outg. Pressure 60#	Pressure ..... 36# Pressure ..... 50#
¾"				

FINAL TEST

Engine at sump hole pumped through 2100 feet of a single line of 2½" hose:

	At Nozzle	At Pump	R.P.M.
With ⅞" Tip	70 lbs.	230 lbs.	1700
With 1" Tip	45 lbs.	230 lbs.	1700

NOTE: Our Gauges were not tested, however we assume they are correct.

With Our Readers

High Pressure Fog Case Histories

To the Editor

In your March, 1952, issue of FIRE ENGINEERING, under the topic "With the Editor," there is an article "Clear Away the Fog." Bearing upon this subject, the use of water fog, I thought you might be interested in some facts about the high pressure fog apparatus we placed in service in 1951.

I enclose a picture of the test we made on November 14, 1951, using this equipment. A pit 15 x 18 ft. was filled with about 200 gallons of waste oil. This was ignited with 20 gallons of gasoline. In our tests, which were witnessed by chiefs from surrounding cities, the pit was lighted eight times and extinguished eight times in less than 20 seconds each time.

At the D & S Processing Company fire, March 17, we used 500 feet of high pressure hose, 6,000 gallons of water and were in operation for five hours. This fire was in machines consisting of a series of rollers and vats containing highly volatile liquids. The fires in the vats' contents were handled by high pressure fog; the building fire, by 2½-inch lines.

At a fire in an apartment building at 90 Marylin Place, on March 18, 1952, high pressure fog proved of great value, being used entirely to extinguish this fire.

It should be understood that, when necessary, we back up the high pressure fog with 2½-inch hose lines.

There have been many other fires in our city since we purchased our high pressure fog apparatus, where it has proved its worth. Among them were:

November 27, 1951, Styertowne Apartments. Second floor cockloft and bedroom.

November 29, 1951, Veteran of Foreign Wars building, Valley Rd. Fire in upper portion of bar room, in a place very difficult to reach. With the aid of high pressure fog we were able to get to the seat of this fire with a minimum of fire and water damage.

The test of high pressure fog at Clifton, N. J., on November 14, 1951.

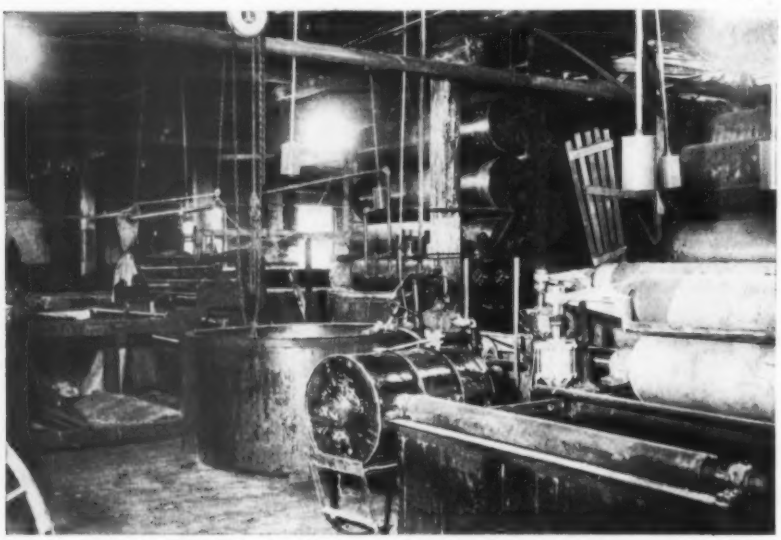
Several minor fires occurred on November 29, 1951, and February 5, 11, 23 and 27, 1952, in all of which we used high pressure fog effectively.

I would call attention to a rather serious fire on December 31, 1951, in a 3-story building at 227 Dayton Ave., occupied as stores and apartments. This fire started in the cellar where show stocks are stored. It was one of those "smoky" jobs, where it was nearly impossible to locate the seat of the fire. By the use of high pressure fog for about 2½ hours, were were able to find the source and to get the fire under control with a minimum of fire and water damage.

On March 5, 1952, we had a fire in a drying oven at the O. E. Linch Co. on Route 6 and Valley Rd. We were able to take care of this fire with very little damage, but it might have been more serious were it not for fog use.

I hope this analysis will prove of value to you; it covers only a part of the fire operations in which we have found high pressure fog valuable.

JOHN ZANET, Chief Engineer
Clifton, N. J., Fire Department



Interior of D. & S. Processing Co. plant after fire had been extinguished.

Problems of Volunteer Companies

Recently the Philadelphia Evening Bulletin published an editorial which said suburban fire companies were facing a dilemma. Many cannot get enough volunteers for response to daylight alarms, and some are having money trouble in a big way. In Montgomery County, the editorial said, where a dim view has been taken of fire company carnivals, companies which supported themselves in that way in the past are seeking new means of financing. More serious, perhaps, than the financial difficulties, is the manpower problem, the editorial continued. So many of the suburbanites spend their days working in the city there is often difficulty in getting enough help to man the trucks when an alarm sounds. Several communities have arranged to dismiss older high school boys to help out. Night alarms present less of a problem, for the volunteers for the most part are home then.

The editorial concludes "Thought is turning toward a small paid daytime force in the more populous places, and perhaps that is the eventual answer."

Comes a letter from a reader of FIRE ENGINEERING bearing upon this situation. Our correspondent writes:

To the Editors

The enclosed editorial . . . has set me thinking about volunteer fire companies and their distribution. . . . I am an active fireman, although a clergyman, and have more than 130 fire calls logged over the past eight years in different towns in which we have been living.

After considerable observation and thought, I am convinced that some method of control (not Federal, Heaven forbid) is needed to prevent the extreme duplication and overlapping which is now bringing added trouble. The control of which I speak would set up an advisor group to determine if a given company is really necessary.

In one Pennsylvania county there are about 75 volunteer companies, several of which are like the company named in the other writeup (a short story about a Pennsylvania company that hadn't had a call in five years and, when they got one, it was on the night of their annual

(*Continued on page* 708)

CHIEF R. H. SWANSON
President
Jamestown, N. Y.

CHIEF G. R. McALPINE
First Vice-President
Director, I.A.F.C.
Southwestern Division
Oklahoma City, Okla.

CHIEF HENRY G. THOMAS
Second Vice-President
Hartford, Conn.

JAY W. STEVENS
Executive Secretary
San Francisco, Cal.

EX-CHIEF DANIEL B. TIERNEY
Secretary-Treasurer
Arlington, Mass.

CHIEF JOHN H. ALDERSON
Past President
Los Angeles, Cal.

CHIEF WM. FITZGERALD
Director
Pacific Coast Inter-Mountain Div.
Seattle, Wash.

CHIEF FRANK BURNS
Director, I.A.F.C.
Great Lakes Division
Grand Rapids, Mich.

CHIEF RAY TILLER
Director and Ex-Pres., I.A.F.C. and Secretary-Treasurer
Missouri Valley Division
Waterloo, Ia.

CHIEF WILLIAM H. SHORT
Director, I.A.F.C.
Dominion Division
Lethbridge, Alta.

CHIEF JOSEPH A. GIAMMATTEO
Director, I.A.F.C., and Pres.
Eastern Division
Glen Echo, Md.

CHIEF HENRY R. CHASE
Past President I.A.F.C. and Director, Southeastern Div.
Miami, Fla.

OFFICERS AND DIRECTORS INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

CHIEF WALTER R. MESSER
Director, I.A.F.C. and Pres.
New England Division
Keene, N. H.

CHIEF WILLIAM TAYLOR
President
Pacific Coast-Inter Mountain Div.
Burbank, Cal.

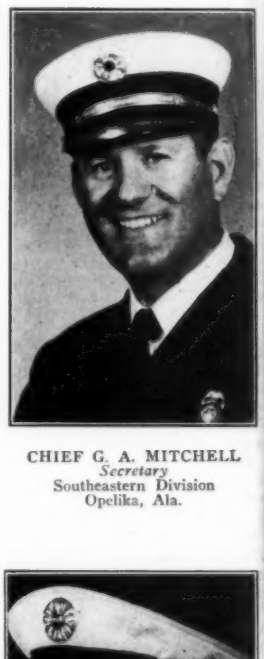
CHIEF SECORD ROBINSON
President
Dominion Division
Kapuskasing, Ont.

CHIEF WAYNE E. SWANSON
President
Great Lakes Division
Rockford, Ill.

CHIEF IRBY GASCON
President
Southwestern Division
Plaquemine, La.

CHIEF ROY S. MOULTON
President
Great Lakes Division
Fire Prevention Bureau
Kansas City, Kans.

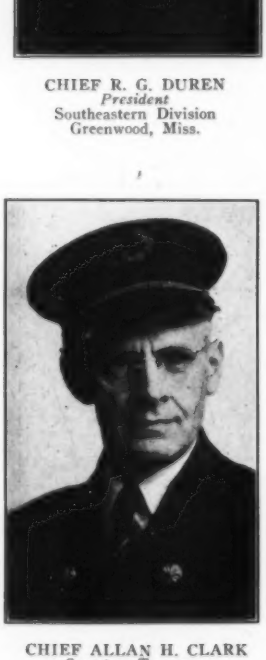
CHIEF R. G. DUREN
President
Southeastern Division
Greenwood, Miss.



CHIEF G. A. MITCHELL
Secretary
Southeastern Division
Opelika, Ala.

CHIEF EDWIN J. CLARK
Secretary
Eastern Division
Wayne, Pa.

CHIEF A. H. KOLTONSKI
Secretary-Treasurer
New England Division
Rutland, Vt.



CHIEF ALLAN H. CLARK
Secretary-Treasurer
Dominion Division
Lakefield, Ont.

CHIEF CHAS. A. DELANEY
Past President, I.A.F.C. and Secretary-Treasurer
Great Lakes Division
Lakewood, Ohio

DIRECTORS AND OFFICERS OF DIVISIONAL ASSOCIATIONS, I. A. F. C.

DR. B. J. BARRODALE
Secretary-Treasurer
Southwestern Division
Houma, La.

EX-CHIEF G. L. MITCHELL
Treasurer
Eastern Division
East Orange, N. J.

JAMES E. JAGGER
General Manager, I.A.F.C.
New York, N. Y.

CHIEF L. C. CANNING
Chairman of Exhibits
Midvale, Utah

OFFICERS OF DIVISIONAL ASSOCIATIONS, GENERAL MANAGER, EXHIBIT CHAIRMAN, I.A.F.C.

Two Baltimore Firemen Killed, Six Hurt in Apparatus Crash

Two members of the Baltimore, Md., Fire Department were killed and six injured, four seriously, when Ladder 9 and Hose 3 crashed together at Charles and Thirty-Fourth Streets, June 4th, last, while answering an alarm of fire which proved to be a burning mattress. Only two members of the two fire crews were unhurt.

The dead were Acting Lieut. George J. Hand, Hose 3, and Fireman William R. Smith, driver of Ladder 9. Lieut. Hand, riding beside the driver of the hose truck, suffered internal injuries when he was thrown off the apparatus. Fireman Smith was crushed to death under the wheels of the hose rig.

Scene of the collision, which occurred shortly after 7:30 P.M., was directly west of the John Hopkins Monument in the intersection of Charles and Thirty-Fourth Streets. The ladder truck was headed south on Charles, from its station at Roland and Union avenues; the hose unit, driven by Fireman John P. Mullen who escaped injury, was headed north from its station at North avenue and McMechen street.

The sirens of both trucks were reported sounding, but vision of the drivers was blocked by the large statue in the center of the street. The southbound truck was approaching the south entrance of a horseshoe driveway leading to the Hopkins campus and the northbound hose truck seemed headed for the north entrance of the horseshoe. The latter unit cut to the left of the monument and struck the side of the big ladder truck. Following the crash, the two pieces of apparatus, locked together, careened to the west side of Charles street and struck an automobile. The driver of the car, Harry Dickey, Jr., had pulled to the curb when he heard the sirens. He leaped from his car to safety when he saw the apparatus bearing down on him.

Calls for aid brought ambulances, emergency apparatus and doctors and special squads of police to handle the crowd of more than 1,000 spectators that jammed the area.

The collision is the second most disastrous fire department traffic accident since motorization of Baltimore's equipment. On November 9, 1949, four firemen were killed and four others injured when two units came together while responding to a minor fire.

New Safety Code for Gas Industry

The American Gas Association has initiated work on a revision of all existing codes in order to prepare a new safety code covering the material, design, fabrication, installation, testing and operation of gas pipe lines and related facilities.

Frank A. Hough, vice-president of Southern Counties Gas Co., Los Angeles, has been appointed chairman of a committee of 52 to draft the code. The group is sponsored jointly by the American Gas Association and the American Standards Association. Also cooperating is the American Society of Mechanical Engineers. The committee is formed of representatives of gas transmission and gas distributing companies; valve and fitting companies; independent research groups; technical universities; consulting engineers and government agencies.

At this writing it is understood no organizations representing fire protection and fire prevention interests are included on the committee.

Los Alamos F. D. Trains Baby Sitters in Fire Defense

The Los Alamos (N.M.) Fire Department under the direction of J. R. Maddy, Chief, Health & Safety Branch; A. C. Abbott, Chief of Fire Department, and Albro Rile, Asst. Fire Marshal, has embarked on a special promotion to "save children from fire" as a part of the department's year-round fire prevention activities and to tie in with the drive of the fire service to save the lives of 4,000 children annually lost through fire.

This effort is to educate and train baby sitters on what to do if, and when, fire strikes. Over 600 copies of a printed sheet entitled "First Things First" have been distributed throughout Los Alamos Boy and Girl Scout Troops and School Classes having students of baby-sitter age.

In these instructions, the baby sitters are enjoined to:

1. Get the baby or children out of the house. Know the safest and most direct route to the outside. Know where all the doors lead to.

2. Call the fire department. Know how to turn in a fire alarm from a fire alarm box. If it is nearby, use it in preference to the telephone and take the baby out of the house when going to the fire alarm.

3. Know where the telephone is and the phone number of the fire department. Be sure to give number of the house, name of street, name of the resident you are baby sitting for, and your name.

The fire department further suggests that if smoke is detected, place the baby near the door to the outside and then in the event that fire does break out, you and the baby can leave the house. Don't leave the baby alone for any reason once you detect smoke, fire or escaping gas—and never stop to fight the fire, sitters are told.

Finally, sitters are urged to visit their nearest fire station for demonstrations and details on turning in fire alarms, and for help in fire prevention and protection if they need it.

Trailer Pumps for Airport Protection

Three trailer type fire fighting outfits have been purchased by the City, of Charlotte, N. C., for use at the municipal airport, according to City Manager Henry A. Yancey.

Mr. Yancey states the new units will be pulled by jeeps and will help to alleviate the city's lack of safety equipment. He said they will be put into use as soon as they are delivered, which will be within a few days, or by the middle of June.

—D. G. SPENCER.

WARD GRANTHAM
Vice Pres. & Gen'l Mgr.
The Gamewell Company

DWIGHT G. W. HOLLISTER
Chairman of Board
The Gamewell Company

FREDERIC S. BACON, Jr.
General Sales Manager
The Gamewell Company

WM. J. CARROLL
Pres. & Gen. Mgr.
Rockwood Sprinkler Co.

J. J. RYAN
Sales Manager
Portable Fire Protection
Rockwood Sprinkler Co.

ROBERT C. HOOD
President
Ansul Chemical Co.

L. C. McKESSON
Vice-President, Sales
Ansul Chemical Co.

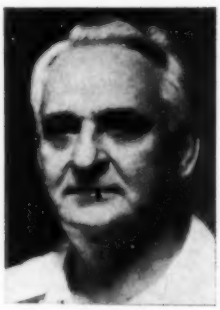
H. G. HASTERT
Genl. Mgr., Fire Extinguishing Div.,
Ansul Chemical Co.

K. B. COVERT
Sales Mgr., Fire Exting. Div.,
Ansul Chemical Co.

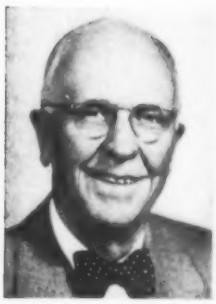
FRANCIS S. BRIGHAM
General Manager
Oren Roanoke Corp.

CHARLES C. LENZ
President
Atlas Safety Equipment Co., Inc.

ARTHUR MYERS
Director of Sales
Atlas Safety Equipment Co., Inc.



WALTER WALKENHORST
President
Ahrens-Fox, Inc.



J. C. GORMAN
President
The Gorman-Rupp Co.

H. E. RUPP
Vice-President
The Gorman-Rupp Co.

S. S. FLINT
General Manager
Bar-Way Mfg. Co.

JERE FLEMING
Vice-President
Safet First Products Corp.

T. S. McINTIRE
F. N. McIntire Brass Works

FIRE EQUIPMENT MANUFACTURERS AND REPRESENTATIVES

W. W. SCOTT
Executive Vice-President
Federal Enterprises, Inc.

L. A. MILLER
President
Federal Enterprises, Inc.

LESTER STEVENSON
Vice-President
The Seagrave Corp.

PETER PIRSCH
President
Peter Pirsch & Sons Co.

W. R. PIRSCH
Vice-Pres. and Treasurer
Peter Pirsch & Sons Co.

HUBERT WALKER
Mgr. Motor Fire Apparatus Sales Engineering Dept.
American-La France-Foamite Corp.

GEORGE R. HANKS
President
American-La France-Foamite Corp.

J. O. BINFORD
Vice-Pres. Charge of Sales
American-La France-Foamite Corp.

G. J. HALPIN
General Sales Manager
American-La France-Foamite Corp.

J. C. SELLERS
Asst. Sales Mgr.
Elkhart Brass Mfg. Co.

H. LOUIS STETTLER
Exec. Vice Pres.
Elkhart Brass Mfg. Co.

E. H. HANSEN
President
Elkhart Brass Mfg. Co.

R. V. VOELKERT
Secy. & Sales Mgr.
Elkhart Brass Mfg. Co.

R. C. C. DU BOIS, Jr.
Sales Mgr., Mobile Comm. Equipt.
Radio Corp. of America

DANIEL E. NOBLE
Vice-Pres. Chge. of Communications and Electronics Div.
Motorola, Inc.

R. B. BARNHILL
Comm. Sales Mgr. Communications Div.,
Bendix Radio Div., Bendix Aviation Corp.

HUGH A. HALLIGAN
Inventor
Halligan Tool

STEWART BOAL
President
Randolph Laboratories, Inc.

FIRE EQUIPMENT MANUFACTURERS AND REPRESENTATIVES

JOHN H. EMERSON
President
J. H. Emerson Co.

J. B. DAVIES
Mgr. Industrial Dept.
Mine Safety Appliances Co.

WM. H. STEVENSON
President
Stephenson Corporation

P. L. STANTON
Vice-Pres. & Gen. Mgr.
E & J Manufacturing Co.

EARLE SCOTT
President
Scott Aviation Corp.

F. E. JAMES
Mgr. Fire Apparatus Div.
Mack Motor Truck Corp.

A. J. SKRIVANEK
Engr. Chg.
Fire Appar. Engrg.,
Mack Motor Truck Corp.

R. B. SARGENT
General Manager
Hale Fire Pump Co.

A. WARD LA FRANCE
President
Ward La France
International, Inc.

NILS G. BJORCK
Sales Mgr., Fire Apparatus
Ward La France Truck
Corp.

JOHN O. VEIT, JR.
Treasurer
C. G. Braxmar Company

JOHN O. VEIT
President
C. G. Braxmar Company

NELSON THOMPSON
Vice-President
Homelite Corp.

H. S. BIRD
President
Corpenter Mfg. Co.

ROBERT P. KOEHLER
Vice Pres. Chg. of Sales
Carpenter Mfg. Co.

B. J. MARCH
Sales Manager
National Foam System, Inc.

GEORGE A. HANNAY
Vice-President
Clifford B. Hannay & Son, Inc.

CLIFFORD B. HANNAY
President
Clifford B. Hannay & Son, Inc.

DWIGHT C. HANNAY
Treas. & Gen'l Mgr.,
Clifford B. Hannay & Son, Inc.

J. G. ZEIGER
Sales Manager
Koehler Mfg. Co.

FIRE EQUIPMENT MANUFACTURERS AND REPRESENTATIVES

G. W. STOWELL
General Manager
Midwestern Mfg. Co.

FRED A. WATEROUS
President
Waterous Company

THOMAS M. BURTON
Vice-President
D. B. Smith & Co.

ARTHUR W. SULLIVAN
Exec. Representative
American District
Telegraph Co.

E. J. ARPS
Pres. & Sales Mgr.
Duo-Safety Ladder Corp.

G. E. KOHN
Mgr., Canvas Div.
Fulton Bag & Cotton Mills

M. O. STOCKLAND, Jr.
Director of Sales
The Four Wheel Drive
Auto Co.

WALTER A. OLEN
Chairman, Bd. of Directors
The Four Wheel Drive
Auto Co.

R. A. OLEN
President
The Four Wheel Drive
Auto Co.

B. D. BARTON
President
American Fire Apparatus Co.

D. D. CRAMER
President
Aluminum Ladder Co.

ALLEN R. MARSHALL
Production Manager
Powhatan Brass & Iron
Works

C. F. REININGER
President and Gen. Mgr.
Powhatan Brass & Iron
Works

VIVAN BUSH
Officer Manager
Powhatan Brass & Iron
Works

H. W. WEBB
Vice-Pres. & Gen'l Mgr.
Buckeye Iron & Brass Works

C. P. McCLELLAND
Mgr., Unox Penetrant Sales
Union Carbide & Carbon
Corp.

K. E. REARICK
Vice-Pres. Charge of Sales
Wooster Brass Div.,
The Fyr-Fyter Co.

J. J. DUNLEAVY
Vice Pres. & Gen. Mgr.
Wooster Brass Div.,
The Fyr-Fyter Co.

GEORGE BUCHHEIT
Asst. Vice-Pres., Sales Engrg.,
Wooster Brass Div.,
The Fyr-Fyter Co.

W. H. LAUBACH
President
Body-Guard Mfg. Co.

FIRE EQUIPMENT MANUFACTURERS AND REPRESENTATIVES

J. M. FLOUNDERS
Manager
Hose Sales, Ind. Prod.
B. F. Goodrich Co.

JONAS R. SMITH
Sales Manager
Eureka Fire Hose Div.
U. S. Rubber Co.

WILLIAM COLE
Sales Manager
Fabric Fire Hose Co.

G. L. SMITH
Sales Manager
Republic Rubber Div.
Lee Rubber and Tire Corp.

N. S. DODGE
President
American Rubber Mfg. Co.

SCOTT E. ALLEN
President
C-O Two Fire Equipment Co.

EDWIN J. NOYCE
Sales Manager
John Bean Div.,
Food Machinery Corp.

W. D. FOLLETTE
Asst. Sales Mgr.
John Bean Div.,
Food Machinery Corp.

C. FLOYD BAKER
Fire Chief and Fire School Director
John Bean Div.,
Food Machinery Corp.

GEO. H. BOUCHER
Vice President
Pyrene Manufacturing C

EDWARD CAIRNS
President
Cairns & Brother, Inc.

F. L. ELLIS
Sales Manager
Fire Hose Div.,
Quaker Rubber Corp.

P. H. PENMAN
Manager
Munic. Fire Hose Sales Div.,
Quaker Rubber Corp.

A. F. LEE
Reg. Mgr.
Munic. Fire Hose Sales Div.,
Quaker Rubber Corp.

C. T. McGRAW
President
Circul-Air Corp.

WILLIAM D. JOHNS
Sales Manager
The Gerstenslager Co.

E. R. SCHELLIN
Asst. Sales Manager
Akron Brass Mfg. Co., Inc.

W. J. LUNDELL
Exec. Vice-Pres. & Gen. Mgr.
Akron Brass Mfg. Co., Inc.

T. C. DU BREUIL
Supt. of Operation
Akron Brass Mfg. Co., Inc.

W. G. LONEY
Mgr. Fire Hose Dept.
Hewitt Robins Incorporated

FIRE EQUIPMENT MANUFACTURERS AND REPRESENTATIVES

The oldest manufacturer of circular-woven fire hose

salutes Fire Engineering on its

75th Anniversary

FROM 1877 TO 1952

EUREKA FIRE HOSE COMPANY,
No. 13 BARCLAY STREET, NEW YORK.
P. O. Box, 4055. JUNIUS SCHENCK, Gen'l Agent.
RICHARD YORK, President,
"RED CROSS," ONE PLY SEAMLESS COTTON HOSE.
"EUREKA" (3 Ply.)
"PARAGON," (2 Ply.)
"RED CROSS," (1 Ply.)
ESTIMATES AND SAMPLES OF SAME FURNISHED ON APPLICATION.
EUREKA FIRE HOSE COMPANY,
JUNIUS SCHENCK, General Agent,
No. 13 Barclay Street, New York.
P. O. BOX, 4055.
EUREKA FIRE HOSE COMPANY,
13 Barclay Street, New York.
RICHARD YORK, President.
JUNIUS SCHENCK, Gen'l Agent.
"EUREKA," (3-Ply.)
"PARAGON," (2-Ply.)
"RED CROSS," (1-Ply.)
THE MOST PERFECTLY CONSTRUCTED FIRE HOSE OF MODERN TIMES.
"EUREKA" FIRE HOSE.
"EUREKA" SEAMLESS AND RUBBER LINED "COTTON NET-DUCK HOSE."
SEAMLESS AND TAPER WOVEN "EUREKA FLAT PIPES, PRICE, $17.00 EACH.
Eureka Fire Hose Company,
JUNIUS SCHENCK, General Agent,
No. 13 BARCLAY STREET, NEW YORK.
P. O. Box, 4055.
Smooth Interior Filler Ply gives
MAXIMUM NOZZLE PRESSURE
"For greater protection to life and property"
EUREKA FIRE HOSE
195 Hudson Street • New York 13, N. Y.
Division of United States Rubber Company

Eureka Fire Hose has been advertised in Fire Engineering ever since 1877, two years after Eureka was founded. And year by year, Eureka and Fire Engineering have made greater strides in serving the fire-fighting profession. Eureka looks forward to continued association with the leading magazine in the field.

EUREKA

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Cotton Rubber-Lined Fire Hose

195 Hudson Street • New York 13, N. Y.

Division of United States Rubber Company

News of the Manufacturers

International Announces New Heavy Duty Fire Truck Chassis

International Harvester Company's introduction of a new, heavy duty fire truck chassis, featuring a choice of engines developing from 266 to 318 horsepower, rounds out a balanced series of seven models the company has designed specifically for fire-fighting service, the company reports. Available in several wheelbases, the newest unit is International's model L-306. It has a gross vehicle weight rating of 30,000 pounds.

Deliveries of the biggest truck in the series, engineered and equipped to mount water pumps capable of delivering 1,000 to 1,250 gallons per minute, are being made from International's Emeryville, California, motor-truck plant.

The L-306 is engineered to deliver sustained performance in prolonged pumping operations at high pressure and full capacity. By expanding its motor-truck line to include this new model, International now offers a range of fire engine chassis to suit the requirements of large cities, small communities, rural areas, forest districts and all other fire-fighting units.

Engines powering the Internationals range from the Silver Diamond 240, which develops maximum brake horsepower of 108 at 3,600 rpm for the L-166, to the Hall-Scott 1091, which provided 318 horsepower at 2,200 rpm for the L-306. Other engines available in particular models include the Blue Diamond 269, the Red Diamond 372, 406 and 450 and Hall-Scott 855 and 935.

Model L-166 trucks produced at International's Springfield, Ohio, motor-truck plant, and models L-176 through L-206, products of the company's Fort Wayne, Ind., Works, carry main fire pumps in GPM capacities that range up to 750 gallons, and booster tanks with gallonage upward from 200 gallons.

Typical of the fire departments, which have purchased new model L-306 trucks are: Los Angeles County, Burbank, Oakland, Petaluma and Berkeley, Calif.; Salt Lake City, Utah; Portland, Ore., and New York City. Other L-line fire engine chassis have been in service throughout the United States since their introduction.

Announcing Universal Fire App. Corp.

On June 1, the Boyer Fire Apparatus Co., located since 1879 in Logansport, Indiana, went out of business. Buildings and property were sold to Alpha Industries of Logansport, manufacturers of aircraft and automotive parts, tank and tractor parts. All other assets were sold to Harry T. Armington and associates.

On June 26, Mr. Armington and associates formed the Universal Fire Apparatus Corp. This new organization will continue to manufacture Boyer fire trucks, using the Hale pump. Also included in their program are service of Boyer trucks already in operation and repair of all makes of fire trucks. They will continue to occupy the premises formerly used by the Boyer Co.

Officers of the new corporation are: Harry T. Armington, president; A. F. Casse, vice-president; Glenn L. Miller, secretary; E. H. Becker, treasurer.

Mr. Armington brings to the new corporation twenty-five years of experience as a volunteer fireman, fire apparatus salesman, fire prevention engineer, and fire apparatus manufacturer. During World War II he assisted in design and development of fire trucks for Army use and, later, as Major, Corps of Engineers, was in charge of fire prevention for the Second Army. For the past four years he has been associated with the Boyer Co.

Harry T. Armington

Mr. Casse, of Indianapolis, has been in the fire apparatus business for eleven years. He heads his own sales and service organization, Midwest Fire & Safety Equipment Co., of Indianapolis.

Mr. Miller is a Logansport lawyer and was incorporating attorney for the new corporation. Mr. Becker is president of Alpha Industries.

Leonard Rotary Gear Pump

The American Fire Equipment Company of Boston, Mass., has announced the acquisition of national distribution of the Leonard rotary gear pump, manufactured by Potter-Horn, Inc., of Otterville, Mass.

This compact unit, which weighs but 73 pounds net, has a capacity rating of 150 g.p.m. at 150 psi, at 2000 rpm.

The pump can be mounted to run in either direction.

Each pump is given working tests developing pressures up to 300 psi before leaving the factory.

This International model L-306, with gross vehicle weight of 30,000 pounds, has been placed in service by the Oakland, Calif., fire department. This chassis mounts complete fire fighting equipment, including 1,250 gallons per minute pump, 500 gallon water tank, ladders and hose. Wheelbase is 169 inches. The truck is powered by a 275 horsepower engine.

Bendix Introduces New Mobile Radio

Bendix Radio Division, prominent makers of electronic equipment, has introduced a completely new line of mobile communication equipment. According to R. B. Barnhill, Commercial Sales Manager, the new products, known as the "Command-Air Series," will operate in the very high frequency band and will be adaptable to all VHF mobile applications. A complete line of microphones, antennas, handsets, speakers and other accessory equipment will be available.

Barnhill stated that the "Command-Air" equipment will make use of either the three unit packaging of transmitter, receiver and power supply, or single package. Both units will be electrically identical and are designed to meet the mechanical and electrical specifications of the Association of American Railroads and the Radio Television Manufacturers Association.

The new series features crystal controlled, dual channel operation in the 152-174 band.

Units will be available in a wide range of models and can be supplied with transmitter output of 10, 25, 30 or 60 watts. Fixed stations of 250 watts are also available. A new ingenious filter design provides for operation on the present channel spacing of 60 kilocycles but will also allow for easy conversion

RECHARGES at any air pump!

For fires in textiles, flammable liquids and electrical equipment, you can't beat the New *Kidde* 5 pound Dry Chemical Extinguisher. It has more fire-killing action than any other unit of its size. It operates by air pressure and can be recharged at any air pump.

Kidde

Walter Kidde & Company, Inc.
833 Main St., Belleville 9, N. J.
Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc. and its associated companies.

to any one of the new proposed channel band widths, thus deferring obsolescence of the equipment for many years, according to Barnhill.

All units are packaged in Hammerloid cases, built rugged to withstand shock and vibration. A feature of the new mobile equipment is its easy removal from the case.

New Air Raid Siren

A new Mobil-Directo electric air raid siren—twin to the Mobil-Directo gasoline air raid siren—is now being manufactured by Biersach & Niedermeyer Co., of 1937 North Hubbard Street, Milwaukee. Like the Mobil-Directo gasoline-driven siren, the electric siren was designed by Sydney J. Lattow.

New motor-driven air raid siren.

This siren is new in power only—run by a single, 10 HP motor. Mobil-Directo electric siren matches the gasoline siren in power and performance and is currently being produced for those who prefer electrical power.

Both Mobil-Directo Sirens have directional automatic rotation of the sound beam to eliminate dead spots and for more complete coverage than fixed sources. Constructed of heavy gauge steel and powered by single motor, Mobil-Directo air raid sirens are lightweight mobile units which can be easily mounted or installed.

These sirens are Federal Civil Defense Administration approved for matching funds.

Currently being produced for the Armed Forces, the Mobil-Directo gasoline air raid siren was given a decibel rating of 126 to 130, at 100 feet, by the U. S. Signal Corps and the National Bureau of Standards.

In numerous tests the Mobil-Directo Air Raid Sirens out-performed all other sirens in decibel rating and audibility when calculated on a weight, cost, and ease of installation basis.

For further information and details about Mobil-Directo Air Raid Sirens—either the 25-HP gasoline-driven or the electric siren—write Biersach & Niedermeyer Co., 1937 N. Hubbard St., Milwaukee 12, Wis.

Modern fire equipment showroom.

Illustrated above is the new showroom warehouse and repair and servicing shop of the Nat. Alexand... Company, at Laurel Springs, N. J. The establishment is devoted exclusively to fire and safety equipment. Nat. Alexander is President of the company.

Independence Improves Fire Department

Independence, Mo., home town of President Harry Truman, boasts a thoroughly modernized fire department today.

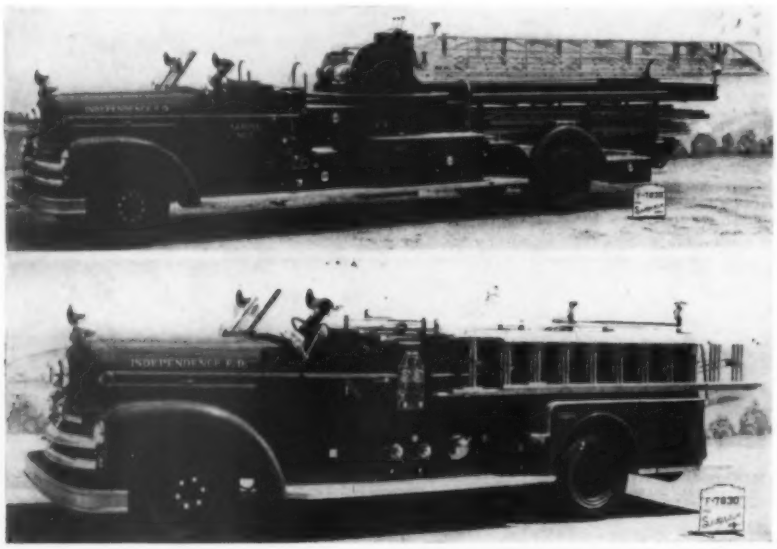
Mayor Robert P. Weatherford said that among improvements recently made to the fire department are: two new fire stations; remodeling the two old st... tions, and acquisition of new apparatu...

At the present time the Independence Fire Department has the following ap... paratus:

1—1952 Seagrave 85-ft. service aer... ladder truck
2—1952 Seagrave 750-gallon pumpe...
2—1949 Seagrave 750-gallon pumpe...
2—1928 American-LaFrance 750-ga... lon pumpers
1—1935 American-LaFrance 1,0... gallon quad pumper

The fire department improvem... program required an expenditure ... $160,000. Two new men have b... added, making the total strength of ... Department 41, including officers.

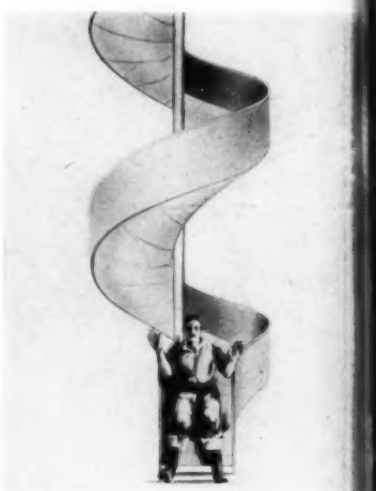
The population of Independence is a... proximately 40,000.



Top: Seagrave 85-foot service aerial ladder recently added to Independence, Mo., Fire Department. Bottom: Independence's newest pumper.

Potter Fire Escapes for Answering Alarms

Two things are essential for the nig... alarm: (1) Getting down to the appa... tus floor quickly, (2) Getting do... safely. The old brass pole has suffic... tor a long time but it is being ch... lenged at last.



Potter slide for answering alarms.

"Today" the manufacturers of th... Potter Fire Escape state, "there is being installed the fast, safe Potter 'slide.' For many years both Underwriters and

(*Continued on page 692*)

LIGHTER — STRONGER — FLATTER FOLDING QUAKER HOSE GIVES YOU 33% EXTRA SPACE FOR PACKING EXTRA FIRE-FIGHTING FOOTAGE

Compare these actual photographs of compact Quaker "Easy-Fold" Hose with ordinary bulky type construction. Here's proof that you get up to ⅓ more storage space with Quaker Fire Hose. You can pack 3 feet in the space of 2 in truck beds and on racks. Quaker gives you extra fire fighting protection . . . without the extra bulk!

New Quaker design and construction mean flatter folding, greater flexibility, easier handling. Extra tough cotton jacket resists abrasion and heat. Expertly compounded rubber tube is non-acid forming. It won't dry out, become brittle or crack.

Don't gamble with your fire protection. Be safe . . . be sure . . . buy Quaker. Order from your nearby Quaker distributor today.

SEND FOR YOUR COPY

. . . of new illustrated Quaker folder. Full of useful tips on "How To Get The Most Out Of Fire Hose." Write today.

QUAKER RUBBER CORPORATION

DIVISION OF H. K. PORTER COMPANY, INC.

PHILADELPHIA 24, PA. · BRANCHES IN PRINCIPAL CITIES

The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

USE OF POWER BOATS BY FIRE DEPARTMENTS

THE Round Table of this month is a fitting corollary to the study on rescue services published elsewhere in this issue of FIRE ENGINEERING. In the belief that our readers would like to know to what extent small boats and power propulsion are being employed by fire departments throughout the country, a representative number of fire chiefs selected from every part of the nation where there are waterways or where flood conditions may exist, were asked the questions in the box on this page.

Unlike some Round Table questions, there appeared to be no sharply divided opinions on this current topic. Because questionnaires were sent to departments on or near waterways, it was expected that a large number of respondents would admit to having these emergency boats. Such proved to be the case, but there were a number who combined replies to questions one and five, by saying that although they did not presently have boats of any kind the could see the value in them, and wanted them. Some others also stressed the fact that although they had a boat, or boats at present, these were not powered, and they believed the addition of power, such as an outboard motor, would materially increase the usefulness of their units. The reasons given for wanting boats, and/or power drive, are generally the same as the uses classified in the replies to question number two.

The most universal use for such emergency craft is for recovery of bodies and for aid in fighting waterside fires. It is quite interesting to learn how many fire departments have equipped these small boats with minor fire fighting facilities as well as some first aid equipment. A number of large city departments, having large fire boats, use small craft as auxiliaries for attacking fires where the larger boats cannot operate, and for miscellaneous rescue and other work. Some of these are self-powered while others are equipped with outboard motors.

Other uses of these small boats include rescue of persons who have fallen through the ice; water patrols; stand-by during aquatic events such as races, swimming meets, etc.; removal of persons and property during floods, etc.

It is disclosed that during the past few years, two major developments have taken place. The first is the switch to all-metal boats, with aluminum coming into prominence; and second, the interest in outboard motors. A number of chiefs complained of the weight and vulnerability of the wood craft although some like their plywood boats. There is almost universal agreement on the need for good power plants in this emergency work. Manual operation is too slow and tiring. Many departments must cover larger areas by boat and fast response is said to be as important in some marine rescue work as on land.

Some chiefs suggest the wisdom of having several extra outboard power plants on hand for application to additional boats that may be required in an emergency, or for replacing other motors.

There is no indicated dissent over the usefulness of this equipment—both boat and outboard motor. The prevailing idea is expressed by one chief who said that like some fire department tools, this equipment might not be used for a long time, but when it was needed it was badly needed. When such marine rescue and first aid facilities are wanted they are greatly wanted.

HERE IS THE TOPIC

1. **Do you maintain a power boat (or boats) in your fire department for emergencies?**
2. **For what purposes is the boat (or boats) employed?**
3. **Is the boat (or boats) powered by inboard or outboard motor?**
4. **Have you found it a useful piece of equipment?**
5. **If you do not at present maintain a boat (or boats), do you believe it would be a useful addition to your equipment? In what way?**

A number of respondents stress the good will and public relations that possession of such facilities develops for the fire department. Some chiefs bemoan the fact that although they may need boats, they are dependent upon police or sheriff's office or private parties for this service.

One point developed by the survey is the fact that, once the importance of this asset (for it is that) to the fire department is publicly known, local organizations such as service clubs, or others are quick to donate either boat or equipment, or both.

Readers are invited to contribute to this Round Table which will be continued in the September issue. Address replies to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

Discussion of the Topic

J. F. Hosemann, Chief, Vicksburg, Miss.: We have a life boat that is kept at the station with one of the reserve trucks fitted to carry this piece of equipment. It is powered with an outboard motor of sufficient horsepower to operate under most conditions.

It is used to drag rivers and lakes for drowned victims, or to rescue occupants left stranded during floods due to heavy rains in lowlands.

We have found it very useful, in fact, indispensable when we have had to drag lakes or rivers. It would have been impossible to rescue many of the victims without it.

I believe a power boat would be a valuable addition to any department, especially with the many calls coming in during this season of the year.

R. L. Lampley, Chief, Montgomery, Ala.: We have two boats in service for emergencies. One boat is 16-feet in length equipped with a 10 hp Mercury Super Hurricane motor and the other is 14 feet long equipped with a 7½ hp Mercury motor.

This equipment has been very useful in our rescue work, especially in recovering drowned persons.

L. F. Patterson, Chief, Menomonie, Wis.: We are at this time asking for bids locally on a metal boat and an outboard motor. The boat will be used in all type of water rescue work.

We formerly had an old wooden boat which required continual servicing and was quite heavy for efficient handling.

We feel a boat would be a very useful addition to our equipment, as our city lies around a lake which is used for bathing and all sorts of water sports. Also, the Red Cedar river, along with Wilson Creek and Gilbert Creek, can give us a bad time during those Springs which produce high water.

Hugh R. Worley, Chief, Bristol, Va.: We do maintain boats in our department. This service was started in 1947 under the name of the life saving crew which is a crew set up for the purpose of rescue. This unit is housed at the fire station. We have used the boats in lakes, rivers and ponds in and around our town to recover bodies. At the present time we have three

(*Continued on page 709*)

THE BI-LATERAL FIRE HOSE COMPANY

welcomes this opportunity to congratulate the

INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

for its unceasing efforts in behalf of "the Advancement of the Fire Service". We are pleased to cooperate with the International at all times

•

EVERY Fire Chief should be a member of IAFC.

•

Bi-Lateral Fire Hose Company
20 North Wacker Drive
Chicago 6, Illinois

Sustaining Member of IAFC

ARKANSAS, FORT SMITH
Interstate Fire Equip. Co.
L. W. Graves
1532 N. 50th Street

CALIFORNIA, ORINDA
Charles M. Scholz
P. O. Box 523

CALIFORNIA, SAN MARINO
James Lowery
475 Huntington Drive

COLORADO, DENVER
Thos. Hayden Co.
1017 Lawrence

CONNECTICUT, GREENWICH
Leon R. Meaney Co.
W. F. Stoddard
P. O. Box 1355

FLORIDA, LAKE WORTH
Frank Mize
P. O. Box 1126

FLORIDA, CORAL GABLES
O. C. Wipper
413 Fluvia Avenue

INDIANA, INDIANAPOLIS
Midwest Fire & Safety Equip. Co.
1605 Prospect Street

IOWA, BELLE PLAINE
Earl Byers
722 - 12th Street

KENTUCKY, WINCHESTER
O. L. Gore
36 French Avenue

MAINE, WINTHROP
Blanchard Associates

MASSACHUSETTS, MEDFIELD
Charles H. Clougherty Co.
39 Miller Street

MICHIGAN, BENTON HARBOR
Joseph M. Platte
1461 Ogden Avenue

MINNESOTA, HOPKINS
Roy Kelley
114 - 11th Avenue North

NEW JERSEY, LAUREL SPRINGS
Nat. Alexander Co., Inc.

NEW YORK, ELMIRA
W. J. Lawless
207 W. Third St.

NEW YORK, NEW YORK
M. C. and T. F. Murphy
15 Park Row

OHIO, COLUMBUS
Birch Fire Equip. Co.
W. L. and Wm. Birch
2143 E. Livingston Ave.

TEXAS, DALLAS
Jno. T. Hanway
6403 Goliad

UTAH, SALT LAKE CITY
Universal Safety & Fire Equip Co.
727 South West Temple St.

WISCONSIN, MADISON
James A. Fenton
114 Merlham Drive

Short Cuts and Gadgets

ASSET FOR THE TRAINING GROUND

One of the problems of adequately training fire department pump operators has been to locate a suitable source of water for drafting. Very few of even the most modern firemen's training grounds are equipped with such facilities. Training in drafting is therefore undertaken elsewhere. Yet a pool, or pit, with suitable approaches can be constructed at reasonable cost.

The City of Newport, Ky., has installed a simple but effective system for testing out its pumpers at draft, and for schooling its engineers. The layout was designed by Fire Chief Edw. T. Miles of Newport.

The picture tells most of the story. In the set-up, 1-inch, 1½-inch and 2½-inch lines are used by the simple expedient of drafting from the pool and returning the water to it. The pool is 9 feet wide by 18 feet long and 7 feet deep, made of concrete blocks. The wire fence protects part of the pool against trespassers and also serves as a safety measure for fire fighters during drilling. Adjuncts are the rack to which hose nozzles may be clamped during pumping operations, and the platform for fog nozzle and cellar pipe tests.

It will be noted the pool is divided into two sections, only the deep part being fenced-in.

A bouquet to Chief Miles and his men for their enterprise!

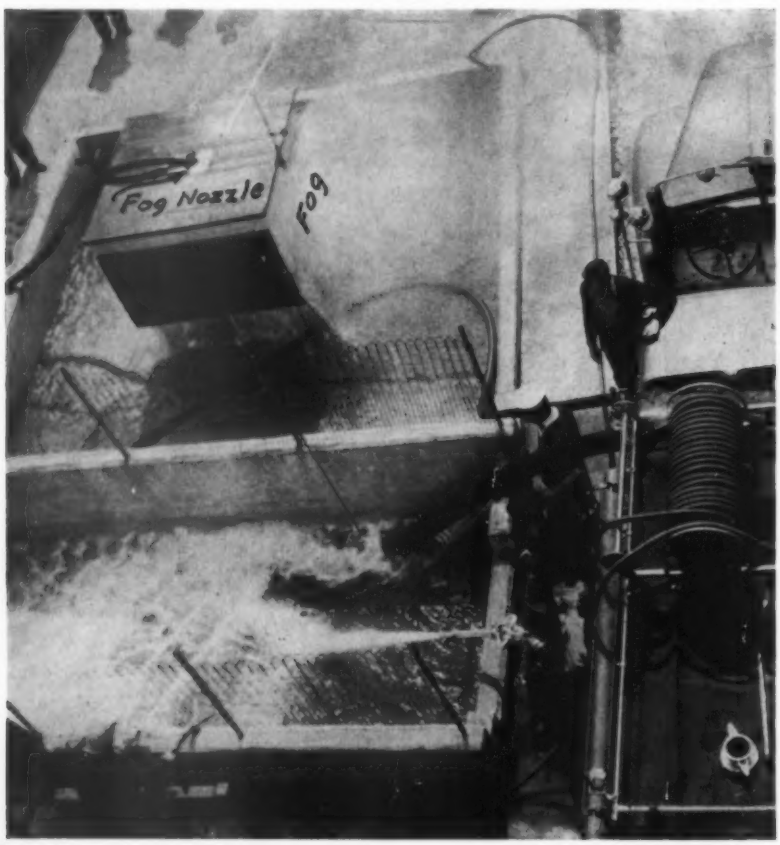
* * *

TEAM WORK IN LADDER OPERATIONS

From reports reaching FIRE ENGINEERING it is disclosed that the series of Chapters on fire department ladders and their use and maintenance, currently appearing in this Journal, have given considerable impetus to the training of firemen in ladder operations.

Commenting on this point, one reader, who prefers anonymity, said: "your series has opened our eyes to the broader, more effective use of ladders of all kinds, in all kinds of operations—and more particularly to the need of more intensive training in ladder work." And then he made this point, which is the basis of its inclusion in "Short Cuts." I wish you would emphasize the importance of *team work* in ladder operations. Most ladder evolutions call for cooperative effort of two or more men. Without this team work the entire operation may be a failure.

"I believe one mistake that is being made is to fail to shift men to various positions during ladder evolutions. Just as firemen should be trained in all elements of firemanship, hose as well as ladder practices, so should laddermen be made familiar with all ladder operations. The man whose only training is on the beams, or at the butt of the ladder, cannot be called well-trained. Men should be versed in every detail of ladder work, and particularly the essential element of "team work."



* * *

TO PRESERVE THE RECHARGE DATE

"This is an old 'trick of the trade,' however, it might be new to some of your readers, as it was to me," writes PFC Edward Parr, from San Francisco, Calif.,—and he continues:

"If you have extinguishers which are located out-of-doors, making it difficult to keep the recharge date on the extinguishers record tag, or if your units are moved frequently, as during fire drills, making it difficult to keep your master index recharge dates straight, don't be discouraged. Either stencil a number on each extinguisher, with a corresponding number on your master index card, or stencil the recharge date on the unit itself. For CO2 units which are weighed, a 'W' may follow the semi-annual date of weighing, and for units which have been hydrostatically tested, a 'H' may follow the test date," and he concludes: "Yours for bigger and better 'Short Cuts.'"

* * *

MORE LIGHT ON AN OLD SUBJECT

This one we left, with apologies, bodily from "Fire Crackers," Jerry Daly's sizzling column in "The Chief." After all, the idea rates it!

So numerous have been fire apparatus accidents and serious delays due to traffic congestion outside of the station at Ladder 30, in Harlem's busy 135th Street, when that active company rolls at night, that Captain Robinson has had to resort to the use of a floodlight on the second floor window. When the company responds, a switch turns on the illumination of the area like a Hollywood set. Ere now a fireman has raced out to the highway with a red lantern to shoo away the trespassing taxicabs and other stubborn motorists. Within a minute the light automatically goes out, but before that time Ladder 30 has disappeared into the night. It is a fast outfit. Captain Robinson's resourcefulness is worthy of a SALUTE.

So say we all of us. And to those readers who ask why don't they use the siren "out front" we remind you that in New York sirens are taboo (they were illadvisedly boo-o-oed out of service by the former head of the city's Civil Defense).

* * *

OPEN HOUSE

This one applies primarily to rural and suburban fire departments but there's a thought in it for the municipal forces, as well. It is taken from the Iowa State College Bulletin Fire Service Information, July, 1952, and reads as follows: "Chief Hammes of Harlan (Iowa) has an idea that he would like to see carried out some Sunday. He would like to have several fire departments in a circular route alerted and kept open some Sunday so that firemen in the area could make a circuit of visitations and be shown around each fire station. Provisions could also be made at each station for entertaining the firemen's wives who might like to make the circuit."

No. 1 of a series of 6

ANSUL

DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT

Extra Services and Plus Values
available without cost to users of
ANSUL
DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT
. . . your Best Protection
FOR FLAMMABLE LIQUID, GAS AND ELECTRICAL FIRES

. . . HUNDREDS OF MEN,
representing practically every industry in America, have
RECEIVED SPECIAL TRAINING
without cost or obligation in
ADVANCED FIRE-FIGHTING TECHNIQUES
with all types of "Approved" Fire Extinguishing Equipment
at the
ANSUL FIRE TRAINING SCHOOL
in Marinette, Wisconsin . . .
. . . the largest and best-equipped industrial fire-training facilities in America.

MODEL 30-B

FRANCIS G. HOOD MEMORIAL BLDG., MARINETTE, WIS.

Send for File No. 146. You will receive a variety of helpful printed matter. Included is our latest catalog which describes Ansul Extinguishers of all sizes—from the small Ansul Model 4 to Ansul Piped Systems and Ansul 2000 lb. Stationary Units. Included also is additional information on Ansul Fire-Training Schools.

ANSUL
Chemical Company
FIRE EXTINGUISHER DIVISION • MARINETTE, WISCONSIN

OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES
ALSO MANUFACTURERS OF INDUSTRIAL CHEMICALS, REFRIGERANTS AND REFRIGERATION PRODUCTS

The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

The Mystery of the Disappearing Dwelling

It doesn't seem possible that a "large house, valued at $25,000" could burn to the ground in the populated suburban area of New York City without somebody seeing the fire or knowing something about it, but that's what apparently happened the week of June 1st in the Shrub Oak area bordering Westchester and Putnam Counties, New York.

On Saturday, June 7, a man who identified himself merely as Mr. Malluzzo of Connecticut, came to the Mohegan Fire Department—which is in the northern section of Westchester County, and asked for information concerning a fire which he said destroyed his spacious home on Berger Street, near Camp Three Arrows, which is in Putnam County. None of the Mohegan fire laddies knew of any unexplained fire in their district and a search of the records disclosed no reports of fire in neighboring areas.

State Police at Putnam Valley station, nearest to the reported scene of the fire, did not receive a call, nor did the Yorktown Police Department, located just over the line in Westchester. Furthermore, residents in the district said they did not know about any such fire; in fact, they didn't know that a house had burned down. It was all news to them.

Mr. Malluzzo said that a week ago he spent the week end at his home. He left it on Sunday. Sometime between Sunday night and Saturday morning, June 7, the house burned to the ground. Only a pile of rubble and ashes remain on the site where Mr. Malluzzo said he had a $26,000 domicile.

One fireman speculated that there was a possibility the house might have been struck by lightning during an electrical storm on the night of June 4th. It was all speculation, however, because no one can be found who saw a reflection of any fire, or the fire itself—or even smelled smoke of a fire.

(Thanks, CHIEF JOHN BAILEY.)

* * *

Orchids to Fireman Hirschfield, N. Y. F. D.

Only a few days after Mayor Impellitieri and Fire Chief Peter Loftus decorated five dead (posthumously) and 24 living members of the New York Fire Department for gallantry in action and other meritorious deeds, the first candidate for next year's awards blossomed forth in the person of Fireman Stanley Hirschfield of Ladder 40.

Responding to an alarm of fire the afternoon of June 16th, at 525 West 135th Street, Manhattan, with his company, Fireman Hirschfield learned from neighbors that Wilson Matos, Jr., aged 2, was alone and trapped in the burning third floor Harlem apartment.

Fireman Hirschfield, accompanied by Fireman Maynard Strawbridge hurried up the front fire escape of the burning building to the smoke-filled five-room apartment where the youngster was trapped. Unable to reach the window leading into the room in which the tot was believed to be unconscious, Fireman Hirschfield, standing on the window sills, straddled the brickwork between window bays until he could work his way to the edge of the building, where he broke in the window, entered the heavily charged room and found the boy unconscious. He managed to make his way out of the apartment by a rear entrance and then applied artificial respiration until medical help arrived.

The youngster recovered and Fireman Hirschfield went about his work.

* * *

She Shoulda Been Frightened!

Within a matter of minutes Mrs. Esther Scott of Rockton, Ill., lived out an entire three act mellerdrammer in which she almost died in a train crash, escaped from a fire, and saved herself from drowning.

The action started when a speeding Milwaukee Road freight train plowed into the 37-year old housewife's car and ground it to pieces against a trestle. The gas tank of the car exploded, setting the trestle on fire.

Mrs. Scott was thrown out of the car into Rock River river. She couldn't swim, but the swift current kept her afloat and she grabbed a tree branch and drifted half a mile.

Men searching for her body found the 105-pound woman lying on the stream's bank. Mrs. Scott allowed as how "she was frightened."

(Thanks, EDWARD O'NEILL.)

* * *

Hot Off the Tape

Des Moines, Ia., firemen battled the effects of a beer can barrage June 11 in dousing a fire in the rear of a fruit market. The flames exploded beer cans with reports like a barrage, spilling a pool of beer onto the floor and (says the news report) "hampering the firemen." Musta been tough wading through them suds! . . . Glenn Roach, volunteer fireman of Fulton, Ky., carried a mattress, that he had doubled up, out of a burning house. He heard the screams of an excited mother whose baby could not be found and was believed to be still in the house. Roach laid down the mattress—and there was the missing baby—unharmed! . . . John Smith, 19, tackle on the University of Tennessee Football squad, was smothered in a $60,000 fire that swept the Elmira hotel, Wildwood, N. J., June 15. . . . In Sault Ste. Marie, Ont., neighbors rushed into the burning home of Mrs. L. Derry and rescued a 6-year-old girl from the bath tub. The 4-room house was destroyed by the blaze, which spread from a trash fire in the yard. . . . In Minneapolis, Minn., a 2-year-old girl died in her flaming crib when fire, started by her two small brothers playing with matches, swept through a summer cottage at Island Park. Sandra Opdahl, the victim, was left home alone with her brothers, James 5, and Ronnie 4, when the fire broke out. . . . A swift kick in the seat of his pants, administered by his father, saved the life of Charles Eschback of Minneapolis. Pop socked the son to prevent him touching a live power wire. . . . Councilman James McGrath is burned up over the condition of the 50-year-old firehouse of the Borough of Pompton Lakes, N. J. He told other members of the Council the firehouse was a "fire trap" and they should spend $12,000 to remodel the 3-story wooden structure. "If the building ever caught fire," he said, "we'd lose not only the building, but the fire engine too." Where have we heard that tune before? . . . In Sioux City, Dr. Frank Aliquette was about to toss a cardboard box into a rubbish fire but thought better of it, and came out $13,000 ahead. The Doc and his wife were burning trash after cleaning out the attic at the home of his mother, who died some months before and were throwing empty boxes into the fire when the Doc felt something inside one. Then he noticed the corner of a $100 bill sticking out from beneath the lid. Inside he found the 13 grand. He figures his mother musta hidden the money without telling members of the family. . . . District of Columbia Fireman Thomas McNulty was hospitalized with lungs filled with tear-bomb gas and smoke after he was knocked *hors de combat*, following his forcible entry into a Pennsylvania avenue store which set off the burglar alarm, which in turn released the tear-gas bomb (Thanks Irv. Johnson). . . . In Burgettstown, Pa., a 67-year-old coal miner, apparently angered because his $500 life savings had been burned accidentally by his wife, shot her to death, then killed himself. . . . Modest above all!—even if it puts ya in the hospital. That's the motto of Walter Logan, Los Angeles, who awoke one morning to find his house afire. Brother Logan acted pronto—and rushed his wife to safety. Then, suddenly, he realized that he was standing outside without his pants. Whereupon he dashed back into the burning house. He came out, with pants, but also severe burns (Thanks, J. JEBENS.)

* * *

"Hot" Shoulder Pads Explode

Talk about "turning the cold shoulder"—the latest worry is "getting the hot shoulders."

John A. Temmerman, Rochester City Chemist, announced a new switch on the old saying, and on the "exploding sweaters" episode when in May he warned women to watch for flames in their sponge rubber shoulder pads.

Mr. Temmerman warned it was dangerous to dry clean suits padded with sponge rubber. A chemical reaction of the rubber with the cleaning solvent might cause spontaneous ignition, he said. After reports of sweaters catching fire easily in recent months, Temmerman analyzed the pads.

Q.E.D.—what action have the dry cleaning folks taken?

* * *

Firemen Called When Heat Expands Rails

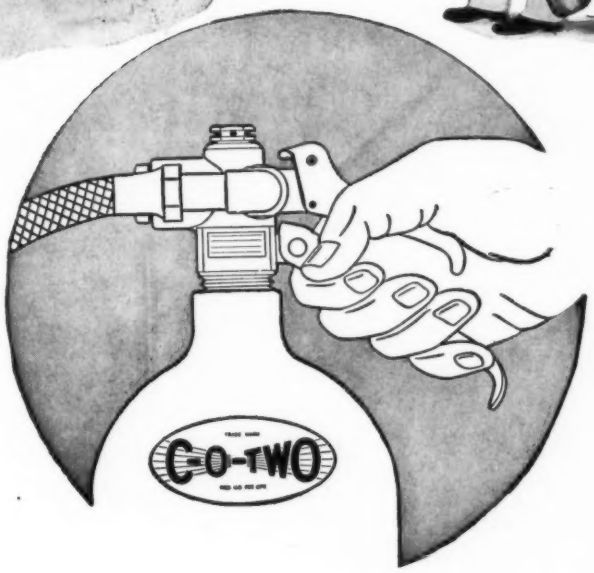
Italian firemen, no less than those of this country, are called upon for many and varied X-curricular tasks. Like the fire fighters (we don't know the Italian name for 'em) of Fissa, Italy.

It gets hot in sunny Italy—so hot that even the trains are slowed down. In July, with the mercury climbing to 106 degrees at some points, trainmen found the unusual temperature had expanded the rails. And at Fissa, traffic had to stop until firemen could be summoned to wet down and shrink the steel back to size with tons of cooling water.

Fearing similar conditions elsewhere, authorities ordered all trains in Northern Italy to move at reduced speed (besides, there may not be firemen to cool down the hot rails, in all parts of the area). WILSON DAVIS

C-O-TWO SQUEEZ-GRIP

assures speedy action!



A quick squeeze of the lever and you get fast, positive fire protection with C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers . . . no loss of time or carbon dioxide while maneuvering around a fire. The C-O-TWO Squeez-Grip Valve is the greatest single contribution to the releasing of carbon dioxide for first aid fire fighting. Easy maintenance . . . only periodic weight checks required . . . carbon dioxide is good until used, not subject to freezing.

Carbon dioxide is a clean, dry, non-damaging, non-conducting, odorless inert gas . . . dilutes the oxygen content to a point where fire can not exist . . . penetrates every nook and corner. Carbon dioxide is one of the fastest and safest fire extinguishing agents known . . . equipment, materials and finishes remain undamaged . . . surfaces stay dry and even food remains perfectly edible. After the fire, carbon dioxide disappears quickly without a trace.

Quality built and fully approved . . . C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers are highly effective on flammable liquid and electrical fires, as well as some surface fires involving ordinary combustible materials . . . rated by Underwriters' Laboratories, Inc. and Factory Mutual Laboratories for class B and C fires.

Convenient 2½, 5, 10, 15 and 20 pound hand sizes . . . discharge horn non-conducting, corrosion resistant, shatterproof, non-metallic construction.

Also, convenient 50, 75 and 100 pound wheeled sizes . . . available with sturdy, wide-faced wheels either with or without rubber tires, as well as available with or without discharge hose and horn protection cover.

Act now for complete free information on these top quality fire extinguishers. Remember . . . you can't put fire off . . . fire doesn't wait. Get the facts today!

C-O-TWO FIRE EQUIPMENT COMPANY

NEWARK 1 • NEW JERSEY

Sales and Service in the Principal Cities of United States and Canada

Affiliated with Pyrene Manufacturing Company

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers • Dry Chemical Type Fire Extinguishers • Built-In Smoke and Heat Fire Detecting Systems

Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems

FALSE ALARMS

Fire Service Humor of 75 Years Ago

The following two ancedotes, reprinted from "The Fireman's Journal," predecessor of FIRE ENGINEERING, back in 1877, are typical of those which were in vogue in the fire service seventy-five years ago.

What Dan Bailey Did

You've all seen such characters as poor Dan Bailey. There's always some such personage hanging about every town. Not exactly dangerous, but the most worthless piece of humanity conceivable. A poor, drunken, wretched sot. Occasionally he did a little work, sawing wood or cleaning up somebody's yard, and so got money to get a little whiskey. But that was all, and how he got all the liquor he drank, where he got food to eat, where he slept, where his clothes came from, was a mystery. Not that he was possessed of an elaborate wardrobe. The same dirty, ragged suit of clothes had been his only adornment for years. It was amazing how he made them last so long. Perhaps the dirt held them together. If his face had been washed, or his hair and beard combed, they showed no signs of it, and so poor Dan was kicked and cuffed about, the jeer of the children, the village ne'er-do-well.

One night—a sharp, frosty night in autumn—the village was roused by the wild cry of fire. The flames had selected for their prey the cottage of a poor laborer. By the time the aroused inhabitants reached the spot, the whole structure was ablaze. The family had fled from it, and the people stood round to see it burn. Suddenly a wild shriek rent the air. "Me baby! me child!" In the excitement of the moment a young child had been forgotten in the house. The mother, half frantic when she made the discovery, rushed toward the burning building. She was only a poor woman, but a mother's love was strong within her, and her cries were pitiful. Dan Bailey heard them. He came forward and learned the awful truth. Worthless wretch though he was, his heart beat in sympathy for her. He turned and looked at the blazing pile. The hot tongues of flame leaped from every corner. It was a surging, roaring mass of fire. It seemed impossible for a human being to enter it and come out alive. Dan Bailey gazed at it for a moment. There was a look of fixed determination on his bloated face. He spoke: "If the kid's in thar, he's a goner," and he walked away.

* * *

A Man Who Would Quell a Panic

Six or eight congenial spirits sat around a stove in a Detroit grocery the other night and after several other subjects had been exhausted some one introduced that of panics in churches, theatres, and halls. This gave Mr. Hopewell a chance to remark:

"Gentlemen, I just long to be there."

"Where?"

"Why, in one of those panics. Yes, sir, I'd give a new twenty-dollar bill to be in the theatre one night when there was an occasion for a panic."

"Why?"

"Why, because one cool, level-headed man could stop the thing as easily as you could end up that barrel of flour."

"Well, I dunno about that," observed one of the sitters. "There is something awful in the cry of fire, and hear it where and when you may, it startles and frightens. What would you do in a theatre in case there was a cry of fire and a rush?"

"I'd stand upon my seat, pull a revolver from my pocket, and shout out that I'd shoot the first man who attempted to crowd or rush. One cool man would check the panic in ten seconds."

While the subject was being continued the grocer went to the rear end of the store, poured a little gunpowder on a board, and gave three or four men the wink. Directly there was a bright flash, yells of "Fire" and "Powder!" and every man sprang up and rushed. Hopewell didn't spring up and talk of shooting. On the contrary, he fell over a lot of baskets piled between him and the door, got up to plough his way over a rack of brooms, and when he reached the sidewalk he was on all fours, white as a ghost, and so frightened that he never looked back until he reached the opposite side of the street.

A stenographer was regaling her bored fellow workers with the tale of her adventures on the previous night. "This handsome guy," she said, "took me up to his apartment and showed me a closet that contained at least fifteen absolutely perfect mink coats. And what do you know, he gave me one of them."

"What did you have to do?" queried Catty Cora, the office skeptic.

"Oh, just shorten the sleeves a little," replied the steno.

* * *

Virgin timber is timber which has never been axed.

* * *

Other Point of View

"Look at that one—the one staring at us through the bars. Doesn't he look intelligent?"

"Yes. There's something uncanny about it."

"He looks as if he understood every word we're saying.

"Walks on his hind legs, too, and swings his arms."

"There! He's got a peanut. Let's see what he does with it."

"Well, what do you know about that! He knows enough to take off the shell before he eats it, like we do."

"That's a female alongside of him. Listen to her chatter at him. He doesn't seem to be paying much attention to her though."

"She must be his mate."

"They look kind of sad, don't they?"

"Yes, I guess they wish they were in here with us monkeys."

"Every fire department has a night shift, but try to explain that to my mother at bedtime!"

CIVIL DEFENSE'S MIGHTY TWINS

Your Life Depends on MOBIL-DIRECTO AIR RAID SIRENS

ROTATING DIRECTIONAL

NEW IN POWER ONLY

MOBIL-DIRECTO ELECTRIC AIR RAID SIREN

Designed by Sydney J. Lattow

The most powerful electric siren built — and it uses only one 10-HP famous name motor! Mobil-Directo Electric Air-Raid Siren outperformed all other sirens — tested recently in Chicago — in decibel rating and audibility when calculated on a weight, cost, and ease of installation basis. No expensive accessories or costly installations necessary.

Designed by Sydney J. Lattow

25 HP AIR-COOLED ENGINE

MOBIL-DIRECTO *Gasoline-Driven*

MOST POWERFUL SIREN ON THE MARKET

for horsepower used — outperforms other sirens costing twice as much — does the work of approximately seventy-five small, low powered devices. Expert sound engineers, U. S. Signal Corps and National Bureau of Standards give Mobil-Directo rating of 126 to 130 decibels at 100 feet. Constructed of heavy-gauge steel — withstands years of service. Light weight, mobile unit — can be mounted on trucks or strategic defense buildings easily and quickly. No costly wiring or towers necessary for installation. Low maintenance cost. Consistent operation guaranteed in the event of power failures, sabotage and under blackout conditions. Remote control wiring optional.

Federal Civil Defense Administration approved for matching funds. Used by Armed Forces and in numerous municipalities.

Mail this coupon now for further information.

BIERSACH & NIEDERMEYER CO.

1937 N. HUBBARD ST. • MILWAUKEE 12, WISCONSIN

Please send me complete details on
MOBIL-DIRECTO AIR RAID SIRENS

Check one: ☐ Electric Siren
☐ Gasoline Driven Siren

Have your technicians chart our area at no cost!
City Map Enclosed.

Name.....

Address.....

City.....Zone.....State.....

Seventy-Five Years of Progress

(*Continued from page 622*)

available, that is proving effective in controlling fires is the employment of relay layouts. Contrary to common opinion, relaying of water through several pumpers to a fire is not a new development. As a matter of fact, it dates back to the days of the hand fire engine. Hand engines usually carried about 300 feet of hose on the hose cart, or "jumper", which it was called. Frequently this length of hose would not reach the fire from the water supply. There were few water systems in those days in even the larger cities. To reach the fire, the engines would pump through open butts, into one another, which was known as a "line playing." Sometimes there would be several engines in line. Each would endeavor to supply the engine it was playing into with more water than the latter could take, until the surplus water flowed over its side. This was known as "washing." At every fire, at which such a relay was employed, a contest resulted. Each hand engine in line tried to supply more water to the succeeding engine than the latter discharged. Today, it is not uncommon for a relay line a mile long to be employed, particularly where a fire occurs in a building beyond the limits of the city or town, or in rural areas.

Salvage and Overhauling

Salvage work by municipal fire departments dates back to 1923, when the International Association of Fire Chiefs had on its program a paper which recommended salvage work by municipal fire departments. Although there was some objection on the part of a few fire chiefs to the fire service taking over this work, the benefits of the practice were evident. Originally it was considered the duty of insurance companies to protect property against water damage at fires, and not the responsibility of the municipal department.

However, this concept of the duties of the municipal department were changed and today the fire department is considered an agency for reducing loss both by fire and by water used in controlling the fire.

Following a slow start, salvage operations gained rapid headway in fire departments throughout the country, until today even volunteer departments do this work capably.

It is needless to say that effective salvage work has proved to be not only a fire damage reducer, but also one of the best friend-makers of the fire service.

Instead of maintaining separate companies for salvage work, municipal departments carry salvage covers on ladders trucks and other apparatus, and as men are available, covers are spread when necessary.

Overhauling, too, has advanced in effectiveness in fire departments in recent years. Salvaging of goods, insuring against rekindle, preventing unnecessary water damage following fires, and removing debris from floors of burned buildings are all part of this work.

Industrial Fire Protection

As has been pointed out, industrial fire hazards have increased tremendously in recent years, due to chemical and industrial developments, as well as the creation and employment of new materials.

Complex, costly machinery may be found in most industrial plants today. Widespread use of hazardous chemicals, including volatile flammables, characterizes modern industry.

Seventy-five years have shown a tremendous advance in industrial fire protection. In this period of time, sprinklers, standpipe systems, carbon dioxide installations, foam installations, dry chemical installations, and other extinguishing agents have been developed and applied to industrial fire protection. The tendency during the past twenty-five years has been to adapt to each specific hazard the type of extinguishing equipment best suited for that hazard. In other words, the extinguishing equipment has been tailord to fit the specific hazard.

This trend has proved remarkably effective in making many processes in industrial plants safe where otherwise they would constitute hazards of tremendous potentialities insofar as the destruction of property is concerned.

Automatic alarm systems have been developed to summon help immediately upon the start of a fire.

Insofar as the development of installed fire protection for industry is concerned, the first of such equipment was the perforated pipe system, used in the United States for the first time in 1852.

The first successful sprinkler head was invented in the United States by Parmelee in 1874, while the Grinnell head, which represented the major ad-

"I have told Chiefs about the remarkable work we have done with this pump"—

Chief Chase of Miami

City of Miami, Florida

OFFICE OF THE CHIEF
DIVISION OF FIRE

W. S. Darley & Co.
2810 Washington Boulevard
Chicago 12, Illinois:

In answer to your letter of the 16th, relative to using material, etc., that we have sent you, will be only too glad to grant you permission and hope in doing this we will be able to help some other departments throughout the country to see the light. I am thoroughly convinced that this type of equipment will be used much more extensively than it is today, for there is no question but what it will do the work of the much heavier and more costly equipment and will do it much more efficiently. I do not believe, however, that it means we will do away with your 750 gallon or bigger pumpers, but it will handle practically any residence fire or fires in mercantile establishments that have not gained too great a headway and will naturally reduce materially the water loss, due to the promptness of going to work and also the fact that with your 1½" lines with fog, you can extinguish a fire very easily with a minimum of men. This same equipment will be of untold value to the smaller departments who depend, to a great extent, on volunteers.

Incidentally, we have had wonderful luck with our Champion fire pumps and also would like to say that instead of three trucks with Champion pumps, as you mention, we now have four. On the first truck we made, which was experimental equipment, we installed a Champion 500-gallon midship pump and that pump, although over two years old, is still going strong and we have never as much as tightened up the packing gland. I have told a number of Chiefs around the State about the remarkable work we have done with this particular pump and, on a test with an 8-ft. draft and with a pump pressure of 150 lbs., we delivered 680 gallons per minute on our Reo Chassis which has, as you know, about 140 H.P. motor. With this same outfit hooked up to a hydrant, we pumped 1,030 gallons at 150 lbs. pump pressure. These figures are accurate and we could guarantee to duplicate the original test with ease.

I hope that your advertising will help spread the good work of wet water.

With kindest regards, I am,

Very truly yours,

H. R. CHASE, Chief,
Division of Fire.

Write for Booklet on Champion Fire Pumps and Trucks.

AT YOUR SERVICE: Sales and Service Representatives—East, Midwest, North, South

W. S. DARLEY & CO. • Chicago 12

Factories — Chicago and Chippewa Falls, Wis.

vance in this device, was invented in 1882.

It is quite a common sight to go into an industrial plant today and find general protection afforded by automatic sprinklers; paint spraying rooms protected by automatic carbon dioxide extinguishing or foam systems; flammable volatiles protected by foam or dry chemical installations, and so on.

Seventy-five years ago, none of these effective fire control agents was available. Over a period of seventy-five years, the amazing industrial advance of this nation brought about an equally amazing array of new fire and life hazards. But the scientific resources of this country have been able to match each new hazard with an effective extinguishing agent.

Despite the tremendous increase in value of inventories, the vast increase in size of industrial plants and buildings in general, the overall fire losses have increased but moderately.

What's Burning

THE following list includes fires of $10,000 loss and over in the United States and Canada for the month of July, 1952.

Month Ending July 31, 1952

Birmingham, Ala.—Chi Sigma Chi Fraternity House destroyed.
Birmingham, Ala.—J. E. Cain Furniture Store and Birmingham Rug and Linoleum Co. destroyed.
Demopolis, Ala.—Partially completed Bryan Whitefield Memorial Hospital destroyed.
Wedowee, Ala.—Woodland High School destroyed. Arson.
Phoenix, Ariz.—Show Low Service Station and genl. store of John Scott and Bill Huso destroyed.
Tucson, Ariz.—Home management bldg. of Sunnyside School destroyed.
Mount Ida, Ark.—Moudy Lumber Co. mill destroyed.
Paris, Ark.—Richey Motor Co., Dodge-Plymouth Agency, and Arch's Restaurant destroyed.
Bakersfield, Cal.—Alta Knolls Oil Co., four miles west, damaged.
Burbank, Cal.—Storage shed containing "props," nine street scenes, airplane hangar, air planes stored therein, warehouse bldg., camera and other equip. of Warner Bros. Studios destroyed. Pyromaniac.
Lakeside, Cal.—Gymnasium and locker room at Lakeside Union High School, under construction, damaged.
Los Angeles, Cal.—Three bldgs. of Sascha-Brastoff Products, Inc., ceramics mfrs., damaged.
Los Angeles, Cal.—Appliance store, tavern and restaurant damaged.
Los Angeles, Cal.—Old San Gabriel Blvd. bridge across Rio Hondo River destroyed. Cutting torch applied too near fresh creosote.
Merced, Cal.—Alaska Lumber Co., two miles northeast on Santa Fe Drive, destroyed.
Oleum, Cal.—Union Oil Co. pier and tankers Victor H. Kelly and Lompoc damaged.
San Carlos, Cal.—Sequoia Metalcraft Co. destroyed; Montgomery Ward whse. damaged.
Denver, Colo.—Julius Hyman Co. insecticide plt. at Rocky Mountain Arsenal destroyed. Chemical explosion.
Denver, Colo.—Gump Glass Co. destroyed.
Putnam, Conn.—Apex Textile Co. destroyed.
Windsorville, Conn.—Farm bldgs. of Jacob L. Gilson destroyed.
Wolcott, Conn.—Timothy Moynihan Club on shores of Lake Hitchcock destroyed.
Hapeville, Ga.—Lumber yard owned by H. N. Jackson destroyed. Small boys.
Milledgeville, Ga.—Hodges Lumber and Planing Mill Co. destroyed.
Villa Rica, Ga.—Cannon Casket Co. destroyed.
Kellogg, Ida.—Kellogg athletic grandstand destroyed.
White Bird, Ida.—Dwelling, genl. store, locker plt. and cabin destroyed.
Quincy, Ill.—Reliable Incubator & Brooder Co., mfrs. of poultry supplies, destroyed.
Gary, Ind.—Villers Construction Co. bldgs. destroyed.
Gary, Ind.—Midtown shopping district bldg. housing a furniture store and apts. destroyed.
Indianapolis, Ind.—Garage at Ziffrin Truck

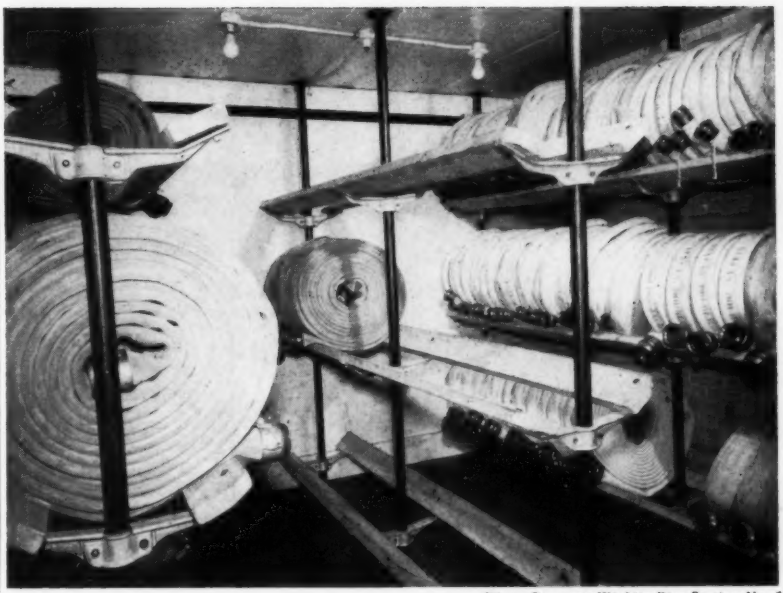
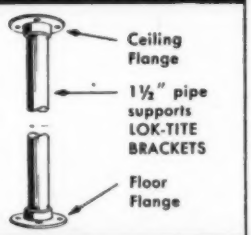


Photo Courtesy Wichita Fire Station No. 1

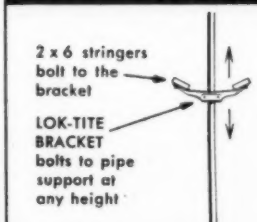
The Solution to Hose Storage Problems

FEATURES

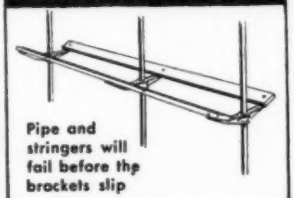
SIMPLE INSTALLATION



EASY ADJUSTMENT



BIG LOAD SUPPORT



Build Your Own Racks With Lok-Tite Brackets

MIGHTY few station houses have all the room they need for good housekeeping. Lok-Tite brackets help solve the hose storage problem by allowing ample ventilation and access in limited storage space.

Build your own racks with new or used materials. Design your own storage to take full advantage of the space available. Have ample room for fittings inspection and ventilation.

Lok-Tite brackets, light weight aluminum alloy, designed for strength and easy installation.

$3.65 F.O.B. Wichita

W-B MANUFACTURING COMPANY
157 NORTH WACO STREET **WICHITA, KANSAS**

The New Carpenter

WIG-WAG REDHEAD

FOR FIRE, POLICE AND EMERGENCY CARS AND TRUCKS, AIRPLANES . . .

CLEARS YOUR WAY FOR SAFER, FASTER, QUIETER RUNS
The oscillating beam of this powerful, flashing WARNING LIGHT
CLEARS THE WAY... and fast!
Range of 1000-1500 feet and a sweep from side to side
FAR, FAR AHEAD
WARNS CARS APPROACHING AROUND INTERSECTIONS

TYPE WW6 (Illustrated). Flashing and Oscillating—6" diameter. Also Oscillating only, 6" diameter.

TYPE WW8. Flashing and Oscillating, 8" diameter. Oscillating only, 8" diam.

TYPE 166. Same as above. Flashing but without Oscillator. 3800 foot range 6" diameter.

TYPE 168. Same as 166. 8" diameter and 4500 foot range.

TYPE F'N'A (Fore'N'Aft). Like 166 except drum shaped with two reflectors and two colored lenses, one facing forward and one toward rear, flashing. 6 volt units will be shipped unless 12 volt specified. Specify other color if red is not wanted.

Type F-5 High Power Portalite

Finest Dry-Battery Light made. Clamps on 7½ volt dry battery pack. Moderate worklight for 24 consecutive hours or a powerful mile-range searchlight for 8-10 hours (much longer if used intermittently). Also available with rugged cast aluminum case for battery in Duro-Satin finish (Type BF-5).

Type RA-1 Red 360° Flashing Light For Cars

Cylindrical Fresnel Lens. Certified by E.T.L. Approved by Nat'l Highway Comm. for work and repair cars and trucks, Fire and Police cars, public utility vehicles.

3¼ in. lens with high quality built-in flasher.
3½ in. lens without flasher.
4½ in. lens with high quality built-in flasher.
4½ in. lens without flasher.

CARPENTER MANUFACTURING COMPANY

200 MASTER-LIGHT BLDG. BOSTON—45—SOMERVILLE, MASS.

"Master-Light Makers for 34 Years"

NEW FOGG-IT "Triple Jet" SAFETY NOZZLE

PAT. PEND.

provides a blanket of fog for small hazardous fires

Scientifically engineered to deliver a fine pattern of protective fog, even on low pressure water systems. *Fits on* any ¾" garden hose. Safely smothers incipient fires in containers of paints, oils, chemicals, etc. Eliminates dangerous splash created by straight stream of water.

Excellent fog tip for booster line work on grass fire when water conservation is important. Excellent in fixed installations. Keeps water damage to minimum since it delivers only 2½ gallons of water at 50 psi. Available for larger volume.

Machined from solid brass and completely guaranteed.

ONLY **$3.00** EACH

FOGG-IT SALES COMPANY

Dept. 7-A, P.O. Box 1985, Modesto, California

"ASK ANY FIREMAN"

Lines hdqts. destroyed. Gas heater explosion.

South Bend, Ind.—Lorelei Machine Co., Inc., damaged. Explosion.

Des Moines, Ia.—Mobile bunkhouse in Chicago and Great Western Railroad yards destroyed. Four loaded box cars damaged.

Louisville, Ky.—Wood Luggage Mfg. Co. destroyed.

Paducah, Ky.—Rhodes-Buford Furniture Co. exchange store destroyed.

Pikesville, Ky.—Kist Bottling Co. destroyed.

Whitesburg, Ky.—Four dwellings, two stores, church, coal tipple, 11 automobiles and two trucks destroyed. Gasoline laden stream was ignited by brush fires.

Salisbury, Md.—Trav-L-Craft Luggage Co. plt. damaged.

Boston, Mass.—Pier One, Fort Point Channel and Fanyard House No. 4 loading platform of New Haven Railroad damaged.

Everett, Mass.—Parkway Club restaurant damaged.

Milton, Mass.—Ice cream plt. of Eliot Creamery, Inc., damaged.

Salem, Mass.—Chase House Restaurant damaged.

Bay City, Mich.—Bay City Hardware Co. destroyed.

Lowell, Mich.—Municipal power plt. damaged.

Paw Paw, Mich.—Paw Paw Laundry Co. damaged.

St. Paul, Minn.—St. Paul Gospel Temple destroyed.

Charleston, Miss.—Sayle Oil Co. destroyed. Gas explosion.

Joplin, Mo.—Bldg. occupied by Joplin Hatwork Co. and Blair Cleaning and Pressing Shop destroyed. Electric motor ignited can of naphtha.

Kansas City, Mo.—Bowling alley at 4040 Main destroyed. Sparks from electrical wiring.

Kingdom City, Mo.—Greyhound Bus Station and Lays Cafe destroyed.

Pleasant Hill, Mo.—Grain elevator destroyed.

Ely, Nev.—Copper Club Hotel damaged.

Forked River, N. J.—Eno's Hotel damaged.

Harrison, N. J.—Old Camden Brewery destroyed. Spontaneous ignition.

Jersey City, N. J.—Central Railroad ferry Catskill tied up for repairs in Morris Basin Drydock destroyed.

Newark, N. J.—Bldg. at northeast corner of Springfield avenue and Camden street, occupied by United Dealers, Inc., wholesale clothing firm; Vernon Furs and Richard's Cleaning and Pressing, damaged. Boys playing with matches.

West New York, N. J.—Barney's Men's Shop destroyed. Short circuit.

Albuquerque, N. M.—Sport Bowl, Inc., destroyed. Explosion.

Las Vegas, N. M.—Farmway Feed and Equip. Co. destroyed.

Corning, N. Y.—Corning Country Club house destroyed.

Fredonia, N. Y.—Buffalo Frosted Foods, Inc., whse. and canning house destroyed.

Holley, N. Y.—W. A. Hawkins Hardware store bldg., Marine Midland Trust Co. bldg., and business block, destroyed.

Jamestown, N. Y.—Alliance Furniture Co. plt. destroyed.

New York, N. Y.—Queens Food Exchange, a supermarket in Rego Park section, destroyed.

Port Chester, N. Y.—Four downtown bldgs., including old Columbus Hotel, destroyed.

Utica, N. Y.—N. Y. State Highway Dept.'s District Repair Shops in Harbor Lock road damaged.

Webatuk, N. Y.—Hunt Country Furniture Co. factory and storage shed destroyed. Spontaneous ignition.

New Bern, N. C.—Hamilton's Cafe, Wallace Holton's garage and Sanderling Battery Co. destroyed.

Oriska, N. D.—School house destroyed. Lightning.

Bradner, Ohio—Two bldgs. of Portage Valley Milling Co. damaged.

Canton, Ohio—Republic Steel Corp. damaged. Hot slag ignited oil.

Cleveland, Ohio—Nine stables at Thistle Downs Race Track destroyed.

Columbus, Ohio—Doddington lumber yard destroyed.

Jackson, Ohio—E. & K. Diner and Hess Bros. Appliance Store damaged.

Port Clinton, Ohio—Whse. at plt. of Celotex Corp. damaged.

Youngstown, Ohio—DeMichael Collision Service garage destroyed.

Sapulpa, Okla.—Bldg. occupied by Reel drug store and Royal Cafe damaged.

Ashland, Ore.—Paul Workman Lumber Co. damaged.

Coos Bay, Ore.—Dwelling on Roland Beattie Farm destroyed. Spontaneous ignition.

Corvallis, Ore.—Corvallis Auction barn destroyed.

Elkton, Ore.—Henry Riggs Lumber Co. destroyed.

Eugene, Ore.—Graham and Hill Lumber Co. destroyed.

Grants Pass, Ore.—F & N Lumber Co. destroyed.

Grants Pass, Ore.—Kelp Chevrolet Co. damaged. Paint explosion.

Klamath Falls, Ore.—Ellington planing mill destroyed.
Myrtle Creek, Ore.—Renfro Body Shop destroyed.
Myrtle Creek, Ore.—Western Timber Products mill and machinery stocks destroyed.
Portland, Ore.—Tony's Super Market destroyed.
Portland, Ore.—Golsonite Roof Products Co. plt. destroyed. Explosion in mixing vat.
Greenburg, Pa.—Showplace barn on Homer Buttermore farm, 11 miles south, destroyed.
Logan, Pa.—Pep Boys Store destroyed.
Pittsburgh, Pa.—Oyster House in Pittsburgh's Golden Triangle destroyed. Overheated motor.
Pittsburgh, Pa.—Apt. house in West End destroyed.
Rheems, Pa.—Barn on Martin A. Cope farm, two miles west, destroyed. Lightning.
Providence, R. I.—Terminal Whse. Co. of Rhode Island; Pittsburgh Plate Glass & Paint Co.; Arcand Spring Co., and Providence Wholesale Drug Co. damaged. Picture film ignited spontaneously.
Spartanburg, S. C.—Eddie Gaines Studebaker Co. and Concord Clothing store damaged. Paint explosion.
Gregcry, S. D.—Farmers Co-operative grain elevator destroyed.
Herreid, S. D.—Lumber whse. of Volzke and Conway; bldg. occupied by William Block; and dwelling of John Pudwill destroyed.
Sioux Falls, S. D.—Mory's Happy Hour Bar, Bassler's Women's Apparel and Ingham Cleaners damaged.
Athens, Tenn.—McMinn County High School damaged.
Clarksville, Tenn.—Trestle of Tennessee Central Railroad destroyed.
Madison, Tenn.—Kusan Plastic Co. bldg. destroyed.
Nashville, Tenn.—D. W. Swindle & Sons Broom & Mop Co. destroyed.
Sunshine, Tenn.—Historic Old Smoky Mountain Inn, summer resort, destroyed.
Houston, Tex.—River Oaks Lumber & Hardware Co. storage bldg. destroyed.
Longview, Tex.—Frank Collier Furniture Co. bldg. destroyed.
Parksley, Va.—Bldg. occupied by Baker's 5-and-10 Cent Store destroyed; Murray's 5-and-10 Cent Store and Parksley Pharmacy, on either side, damaged.
Rocky Mount, Va.—Public School destroyed.
Stuart, Va.—Stuart Motor Co. damaged.
Tappahannock, Va.—Royal Auto Parts Co., U. S. Route 360, destroyed.
Battle Ground, Wash.—Clark County Dairymen's Association elevator destroyed. Spontaneous ignition.
Battle Ground, Wash.—Ernie's Food Market destroyed and Red and White Store damaged.
Kennewick, Wash.—Five planes at Twin City Airport destroyed.
Tacoma, Wash.—Harold E. Dahl's office supply firm damaged.
Vancouver, Wash.—Vancouver Plywood Co. damaged.
Wenatchee, Wash.—Larson Bakery damaged. Gas oven explosion.
Westport, Wash.—Dungness Fish Cannery destroyed.
Clarksburg, W. Va.—Several bldgs. of the General Storage Co. owned by John P. Keely, president of the Keely Construction Co., which operates the storage firm, and the Mountain State Fabricating Co., damaged. The buildings, covering an area of about 4 acres in the southwest section of the city, contained crude rubber, ethyl alcohol, condensed milk and other supplies.
Vivian, W. Va.—Peerless Coal & Coke Co. screening plt., McDowell County, damaged. Sparks from welding operation.
Jasper, Alta.—Jasper Park Lodge destroyed.
Sarnia, Ont.—Harry F. Watson Clothing Store and adj. premises destroyed.
St. Adolpe de Howard, Que.—Main dining room bldg. of Wooden Acres Hotel, two miles north, destroyed.
Cordova, Alaska—Western Fisheries Cannery whse. destroyed.
Fairbanks, Alaska—Pioneer Hotel destroyed.
Ketchikan, Alaska—Standard Oil Terminal destroyed.

Ohio Fire Brigade Group to Meet

The Third Annual Fire Safety Training Conference of the Ohio Fire Brigades Association, Inc., will be held at the Southern Hotel, Columbus, Ohio, September 17, 18, 19, next.

Now in its fourth year, the Association is being copied in other states. The conference is endorsed by a long list of organizations, including safety, industrial, insurance, fire prevention and other bodies. Complete information, including eligibility and fees, may be had from the Ohio Fire Brigades Association, Inc., Box 66, Station A, Columbus 1, Ohio.

Dosigned to Meet the Flammable Liquid Hazards of Your Plant

Increased use of gasoline, alcohols, acetone or other flammable liquids creates serious hazards you may have overlooked in your plant. Check your present protection facilities *now* so you can meet sudden emergencies with fast, positive, fire-killing foam.

National Foam engineers can survey your plant, study risks involved, and then determine the type of *foam protection* best suited to your plant's requirements . . . mechanical or chemical foams . . . the most complete choice of devices available . . . Foam Chambers for large tanks, Overhead Spray Deflectors, Nozzles, Dip Tank or Drainboard Systems, or even small extinguishers and other devices . . . whichever is best suited to your particular needs. Large plant, or small, National Foam specialists are ready to *engineer* foam protection to meet the hazards of your plant.

Let National Foam engineers and chemists show you how to get the best *foam* fire protection today! Consult your nearest National Foam Distributor, or write us direct about your problem.

NATIONAL
FOAM SYSTEM, INC.
Headquarters for Foam Fire Protection
WEST CHESTER, PENNA.

NATIONAL FOAM SYSTEM CONTINUOUS-FLOW PRODUCTION

BOYER

Custom Built Fire Apparatus for 73 Years

The Minonk, Illinois, Fire Department's new "Boyer" Fire Truck recently delivered.

UNIVERSAL will continue to build BOYER Fire Apparatus using Hale Fire Pumps and the finest of material and workmanship in construction.

Repairs, rebuilding and service of Boyer fire trucks and Boyer chemical engines will be continued.

Pumpers — city and rural, tankers, service trucks, quads, and rescue-crash trucks available on a wide choice of commercial truck chassis. Built to customer's specifications.

UNIVERSAL
FIRE APPARATUS CORP.

Successor to Boyer Fire Apparatus Co.

LOGANSPORT INDIANA

Fireman of Yesterday

(*Continued from page* 624)

One can only ponder what the situation would be were it not for the fire service firemen of today—paid and volunteer!

The Fireman of Tomorrow

The fireman of the future will not differ greatly outwardly from the fireman of today. The changes we may expect in tomorrow's fire fighter will be those in knowledge and skill required to cope with the hazards and fire control problems that will develop through the years incidental to new products and processes in industry and new customs that will shape our living.

Requirements for entering the fire service will continue to stiffen together with requirements for advancement in rank. The job of the fireman will continue to grow in importance and in stature, as a profession and a business for the ambitious-minded. It will continue to attract men of higher education and intelligence who will seek in fire control and prevention the ideal vocation.

Although the exciting danger thrill of attack on fire will remain, perhaps multiply, the romance and the glory of yesterday's fire service will die out except, of course, in certain of the volunteer fields. As municipal fire protection and prevention become more businesslike, more professional, more scientific and more regulated, in line with industry, so will tomorrow's fire fighter tend to become more studious, more scientific, more businesslike in his field. Even today there are not many old-time firemen left, who can remember the excitement of the three-horse hitch, the pounding hooves and shining steamer, answering an alarm.

Firemen's working and living conditions will continue to improve. But some prophets believe tomorrow's fire fighter will be busy his entire work period. In short, municipal government will be thinking up tasks to keep the fireman occupied for his entire 8-hour trick, or whatever his duty period. The fire station will become a more and more business "office" or a workshop.

Improvements such as short-wave radio will play a greater part in this business, of fire control and prevention by giving the fireman, fire marshal, inspector and others of the fire service added new, outside duties. Many students of fire control see no reason why every fireman should not be a *fire prevention* specialist as well as *fire fighter*. If this comes to pass, as it will, and as some believe it must if the fire service is to keep abreast of the new hazards imposed by business and industry in this chemical and atomic era of today, and tomorrow, it will almost certainly mean a reduction in fire losses—and may well result in a complete overhauling of the basis of establishing fire insurance coverage and estimating losses and of adjusting claims. Concurrently, this may quite naturally lead to new methods in rating fire protection forces and evaluating the fire service generally.

Despite the intrusion of politics into the fire service and the oracles' prophecies, there will be politics played as long as the fire service is under the control of or is a part of municipal government, the fireman will continue to rate high in public esteem. It is inconceivable that graft and petty politics, political favoritism and other drawbacks which have

tainted the police services, and to lesser extent, some municipal fire departments, will increase in degree and effect. Rather, the reverse. Much, of course, depends upon how the nation and the world goes politically and economically. A serious recession or an all-out war may alter the entire tomorrow's picture. Incidentally, can anyone visualize what our fire service would be like under a dictatorship form of government.

Organized education for the fire service will continue to advance and the demands made upon existing educational and training facilities will increase. In extent and in quality, firemanship training will continue to improve. There will be more fire colleges and schools. There will be more research, more testing, more getting at the facts, more scientific study of the causes of fire, and of methods and technique of fire control and extinguishment than ever before. Where today only one University offers a college degree in fire protection, there will be many institutions doing so tomorrow.

In-service training will be revised; fire departments will have better educational "plants" of their own. They will have firemen who can teach firemanship because they have been taught the principles of teaching. Tomorrow's training grounds and drill schools will be equipped to permit firemen to learn-by-doing, by putting out fires, as well as hearing about them from lectures.

As the fireman's job becomes more specialized, he must have more specialized training. Tomorrow's fire fighter will not be content with a perfunctory, nodding acquaintance with the principles of chemistry, with building, with electrical and other contracting, with hydraulics and the other occupations that impinge upon his job; he will have to know a great deal more about each, and its application to his job.

More and more the task of administering fire departments will require trained, capable brains. Less and less will the titular head of a large fire department be called upon to direct all fire extinguishing operations in the field, as well as to administer his fire fighting "business" in the office. As fire control becomes more complicated, so too the "business" of running a fire department becomes more intricate. Today there is little training for this administrative work available even if a chief wanted to acquire it. Tomorrow much will be available.

Another large-scale development to be watched is that of the legal factors affecting fire protection and prevention. There will continue to be more statutes adopted by states and municipalities affecting the fireman and his job. Many of these new laws will stem from disasters, in some cases, perhaps, the result of a new hazard, such as increased air travel.

Firemen will have to work more closely with architects and builders to impose upon them better fire prevention and fire safety regulations, which must come with the radical developments already taking place—developments such as the supermarket, the shopping center, the outdoor theatre, the drive-in, automatic gas filling station, off-street parking and so on. Firemen will have to be more concerned with traffic and related problems bearing upon the movements of people and vehicles. They will have to be closer to the nation's law-makers to maintain the importance of their posi-

THIS IS ALL YOU NEED TO MAKE 5,000 GALLONS OF AIR FOAM and it costs less than 5 lengths of hose!

Now—without sacrificing hose space—you can carry adequate air foam equipment. *All you need* is one Pyrene* No. 3 Forcing Type Foam Maker and four 5 gallon cans of compound. Only Pyrene makes it possible to produce air foam in volume with such minimum equipment. And with Pyrene it's easy to get into action fast. All you have to do is couple the foam maker into the hose and insert the pick-up tube into the can of foam compound—it starts making foam immediately.

Plan right now to equip *at least one* of your units with Pyrene. Due to increased oil and gas deliveries, more and more flammable liquid fires are occurring every day. Write for name of the Pyrene jobber nearest you.

*T.M. Reg. U.S. Pat. Off.

Pyrene AIR FOAM

PYRENE MANUFACTURING COMPANY

594 Belmont Avenue **Newark 8, New Jersey**

Affiliated with C-O-Two Fire Equipment Co.

you CAN
take it with you!

INDIAN CHIEF
1½ lb. Pick Head
FIRE AXE

FOR PERSONAL SAFETY . . . for efficiency in fire-fighting . . . here's a fire axe every fireman should carry with him wherever he goes. It's the Mann Edge Indian Chief Fire Axe . . . a 1½ lb. beauty with a pick head on a natural finish 15" hardwood handle.

Sheath does double duty—gives full protection to wearer from pick and blade and holds axe securely at the waist. This gives full freedom for both hands . . . allows firemen to "forget" this axe while climbing or carrying hose. But the axe is always with him for unexpected emergencies. No more time-wasting trips to the fire truck for a badly needed axe.

This fire axe is excellent for breaking and entering buildings while causing a minimum amount of damage. It's handy to use in tight places too, where a full axe swing is impossible.

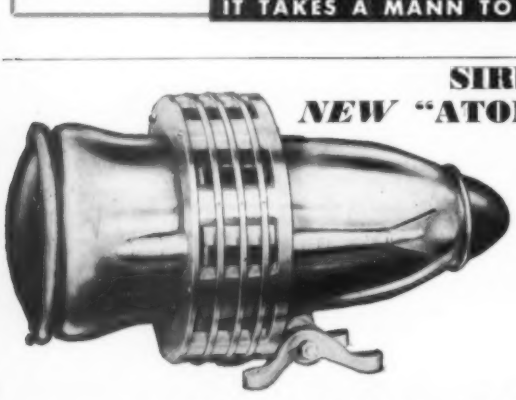
The Indian Chief upholds Mann Edge's over a century old name for quality axes. Satin-polished, tempered, steel blade and pick plus fire-engine red head make it as beautiful a tool as it is tough and durable.

Contact your fire equipment supply center today, or write direct for free literature which completely illustrates and describes Mann's famous line of quality fire axes.

MANN
EDGE TOOL CO.
LEWISTOWN, PENNA.

IT TAKES A MANN TO DO A MAN'S JOB

SIRENO'S
NEW "ATOMIC ROCKET"



The Largest and Most Powerful Vehicle Siren with 360 Degree Flashing Red Lights.

Complete Range of Sizes and Styles and Mounting.

WRITE DEPT. No. 27 FOR FREE CATALOG

SIRENO COMPANY INC.

214 WILLIAM STREET *Established 1908* New York 38, N. Y.

tion to protect themselves and their service against encroachments of government, or of other interests. Therefore fire service associations and other organizations will play an increasingly important role.

In the field of fire control, apparatus and equipment, including automatic fire detection, alarm transmission and fire extinguishment, as well as in fire department facilities for saving life and putting out fires, there will continue to be improvement, perhaps some of it radical. The pace of progress may be expected to accelerate rather than slacken. There will be more manufacturers supplying the fire service, rather than fewer. There will be more research and invention in the field of fire apparatus manufacture design and construction than in the past. There will be new ideas in firemanship which will call for new facilities to apply those ideas.

There will be continual development in cooperative fire control, i.e., mutual aid. More intra and inter-county, state and regional pacts and programs may be expected, regardless of the threat of war. In a word, every state will eventually have as a part of its government, some agency or branch concerned with the menace of fire and other disasters, and with preparing for such emergencies by encouraging better training, adoption of better, more modern fire control facilities, and by systematizing and legalizing fire prevention and protection.

Communications

(*Continued from page 625*)

square mile, a central point of command was recognized as a most essential requirement to setting up adequate fire defense and attack. With that thought in mind, Chicago fire officials went about development of a two-way portable radio set suitable in size and weight and range to enable it to be carried as a back-pack, or slung under the arm, into buildings, or on roofs and, to provide interference-free constant communication between widely separated positions.

Efforts to adapt the early Navy 22-pound radio telephone to fire department use in Chicago, during the high-calibre stream tests in 1939 in that city, met with failure. However under the direction of Fire Commissioner Corrigan, Chief Fire Marshal Mullaney, Lieutenant Myers, Commander Snell, U. S. Navy, and Mr. Wanderlich of the Motorola Company, a portable model was developed which performed well in tests.

War problems delayed production of this unit, but it was later used as a pilot model for newer and better Navy units. Still later, Motorola introduced refinements of these military and other models, resulting in the present day portable units such as are being used by the fire service and having the virtue of light weight, wide range for the limited power, excellent reception and other attributes.

While Chicago was experimenting with walkie talkies, the New York Fire Department also was attempting to develop a workable model, under the direction of Fireman, now Lieutenant Harmatuck. A radio laboratory was later set up at the old fire alarm office on 67th Street, and a pack-set ultimately produced which proved very satisfactory. A modification of this set was used

successfully at the Empire State Building aircrash fire and in other emergencies. The laboratory was later closed, however, and the New York Fire Department since purchased its first ten sets from a radio manufacturer who followed the specifications set down by the department. Walkie talkies or portable radio phones are here to stay. They are becoming standard equipment in many large and small fire departments where they are used both to augment car-to-car mobile radio communications and as separate individual facilities. They are employed also in training activities and in Civil Defense.

Increasing Consumer and Industrial Use of Radio Aids Fire Service

There is another phase of modern radio communications which less directly, but nonetheless affects the fire service. That is the use of short-wave radio by government and civic agencies; by industry and business, as well as by professional and other interests, including the nation's amateurs or "hams."

In the government field are police, water supply (which is tied-in with public utilities), forestry-conservation and highway. In industry there is petroleum, low-power emergency, motion picture, power, railroad, highway truck and special industrial applications. In business there are taxicab, miscellaneous common carriers, the telephone systems and radiophone networks, including the leased radiophone services now employed by some fire service elements.

Each radio installation in a taxicab, a doctor's private car, a highway bus or truck, or in a railroad train or tugboat, constitutes a potential asset to the fire service because each is, in effect, a "traveling fire alarm box." Each can be a powerful adjunct to fire service communications in time of large-scale emergency or disaster. This is particularly true in time of war, when all forms of radio—as well as other communications facilities must be coordinated.

Then there are the commercial radio broadcast stations and networks. These instruments of mass education, information and enlightenment have it in their power to prove a blessing or a bane for the fire service. Blessing in time of trouble—IF their facilities are rightly used; bane, IF for any reason their influence is wrongly applied. Careless broadcasting to the public (and that goes for telecasting as well) of a fire, wreck or other emergency, will create traffic and other conditions that may greatly handicap the response and operation of the fire services. Conversely, proper public broadcasting in the form of supervised newscasting, where the responsible emergency services, such as fire are first consulted before any broadcasting is undertaken, can be of almost limitless aid.

Every fire officer knows today the problem of traffic congestion and crowd-congregating at the scene of emergencies. In most cases the conditions are growing worse and the future looks dark for the fire service. Recognizing this situation, the International Association of Fire Chiefs nationally, and through its Divisions, passed a number of resolutions protesting indiscriminate and careless public broadcasting of fire and other emergencies, which tend to handicap response and fire control operations. Thus far, however, the broadcast interests have ignored these pro-

Super Powerful

2 TO 3 TIMES ANY COMPETING PRODUCT

RED WARNING LIGHT

1/2 THE USUAL COST

• REVOLVING
• FLASHING
• 90 TIMES A MINUTE
• STOPS TRAFFIC • HALTS PEDESTRIANS

THEY SEE IT BLOCKS AWAY — 3000 FT.

by day, a mile or more at night. Its 100 to 150 candle power source (not 32, not 50) warns traffic even in the worst weather.

FROM EVERY ANGLE THAT COUNTS—front, sides, ⅓ to the rear on both sides, full 240°—but masked behind so observers, seeing red, know *which way it's rushing.*

CLEARS THE WAY FOR SPEED

MOISTURE PROOF · SHATTER PROOF · GUARANTEED

Moving parts enclosed in triple plated chrome case; insulated against freezing. Easily installed on roof or fender of truck, ambulance or chief's car. Available in 6 volt 100 c.p. or 12 volt 150 c.p. LOW PRICED. *Investigate!*

TRIPPE MANUFACTURING CO.
609 W. LAKE ST., CHICAGO 6, ILL

WATER when and where you want it!

with HARODIKES
Portable Canvas Water Tanks
THE ECONOMICAL AND EFFICIENT WAY TO CARRY AND STORE WATER.

ON THE JOB - ON THE SPOT
KEEPING AMERICA GREEN

EXCLUSIVE FEATURES
• Self Supporting • Easily Back-packed
• Ideal for Relay Pumping • Easily Transported
Available in 150 & 300 gallon sizes

A WATER SUPPLY AT THE SCENE OF THE FIRE

Write TODAY for Full Information and Price List
HARODIKES INCORPORATED
NORTH DIGHTON, MASSACHUSETTS

tests. It can only be concluded that, if allowed to continue, a major catastrophe may well bring down upon the broadcast industry the condemnation of the government and public, and further restrictive regulations may be the net result.

What of the Future?

Reviewing the progress picture of fire service communications, it is apparent that although major advances have been made during the history of this Journal, there remains much to be done.

The outstanding progress, of course, has been in the field of electronic communications, both in fire detection and fire service communications. It is in this field, also, that there is to be found greatest prospect of future improvements.

The fact is that very few fire departments are today making anywhere near the fullest possible use of the modern communications facilities that are available. Too many are relying entirely upon their old signal systems, with insufficient street fire alarm signal boxes, and auxiliary and building alarm installations.

There is ample evidence available to prove that many municipal fire departments are today relying upon fire alarm "plants" which are long out-of-date and which, because of obsolescence, constitute a definite menace to their communities, and their fire departments. The question naturally arises: how can these municipalities hope to provide their citizens even the minimum of safeguards against fire under these adverse conditions?

As far back as the first issue of this Journal, firemen were handicapped by overhead wires, both power and telephone. Succeeding storms destroyed these overhead fire alarm circuits, jeopardizing large areas by wrecking fire alarm facilities. Yet after nearly every such storm, the poles and wire were replaced, to await the next hurricane or sleet storm. Fortunate indeed the city that has its fire alarm circuits 100 per cent underground.

Four years ago this Journal reminded its readers that fire alarm buildings were generally outmoded, poorly equipped for their purpose and in some cases, open to easy destruction by fire or sabotage. Progress in replacement or rehabilitation of these essentials to fire protection has been slow. The hazards of all-out war, and enemy attack, still remain and the warning that communications centers should be safely and suitably located and adequately staffed and provided for, is again in order.

Once more it should be stressed that the business of fire suppression continues to grow and expand. There are more fires, more emergency calls, more demands upon the fire departments of big and little cities, generally. Yet the facilities for meeting thes increasing demands have not been expanded accordingly. There is real shortage of manpower and mechanical resources throughout the entire fire communications field.

One of the greatest potential avenues of better fire protection has hardly more than been explored. This is automatic fire detection and alarm transmission. Such advance as has been made, largely through the enterprise of a limited number of companies specializing in proprietary, auxiliary and local systems working with municipal fire chiefs, has been of necessity limited to the larger cities and communities. But population and industry and business are moving away from the crowded areas into the suburbs and country, where central station service is not always so readily available.

Fire officers in the future will give more serious consideration to the installation of the type of service and/or protective systems which will afford the greatest measure of protection against the start and spread of fire, and will most effectively detect its origin, and not only notify the nearest fire forces, but will get to work to quell or confine the fire.

The fire service of tomorrow will continue to broaden its use of radio, not only for alerting firemen and speeding them to the right location where they are needed, and facilitating their attack upon the fire, but also for fire inspection and prevention. To the great majority of fire departments, large and small in this nation, the possibilities of radio communications (all types) are as yet unplumbed. It is perhaps too bad that the fire officer of today cannot project his vision ahead the next fifty or 75 years to see what further advances will be made in this one detail.

Today, recording and voice amplifying systems should be the rule, not the exception, which they still are. And another asset of which too little is known, is the teletype. Here is another product that offers possibilities for improving fire communications.

Build your own fire truck for a few hundred dollars

The time has come when rural fire protection should leave the "Fancy Dan" class so that every small community can do a real down-to-earth job of extinguishing fires rapidly, simply and inexpensively.

The nickel plate, red paint, gadgets and polish are good if you can afford them. But all you need for sound, economical fire protection is an Oberdorfer All Bronze Pump hooked up to the transmission of a dependable truck that carries a tank of water loaded with a good wetting agent.

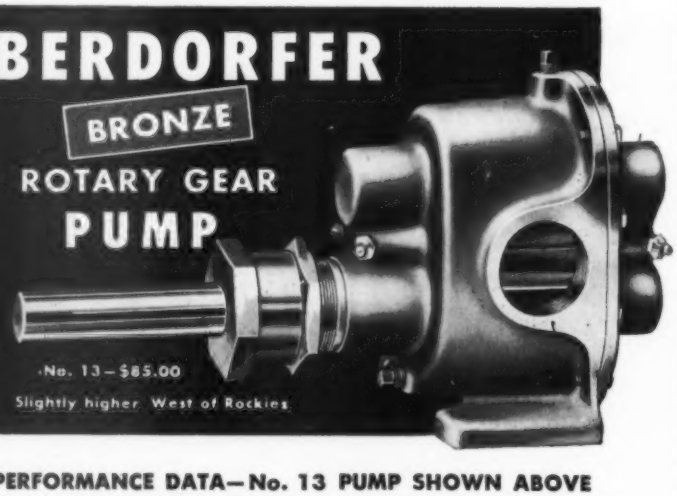
Effective fire control starts just as soon as this outfit can reach its destination and a man can grab the nozzle end of the booster hose and get to the fire. The resulting penetrating stream of over 125 lbs. pressure is the fastest and most important phase of fire fighting.

Do you have a garage, a truck and a mechanic with a little common sense? We have the pump you need. Write for details.

OBERDORFER

BRONZE

ROTARY GEAR PUMP



No. 13 – $85.00

Slightly higher West of Rockies

PERFORMANCE DATA—No. 13 PUMP SHOWN ABOVE

Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
1600	120	500'—1½"	15'	75

For complete specifications of this and other Oberdorfer All Bronze Booster Pumps, and name of your nearest distributor, write:

FIRE PUMP DIVISION OBERDORFER FOUNDRIES, INC., Syracuse, N.Y.

Changes in methods as well as mechanical facilities, some of them perhaps startling measured by present day progress, may be expected throughout fire service communications in the years ahead. Already the "acoustics" of fire communications are under study, and the old, loud-sounding, nerve-shattering electro-magnetic fire station gongs are reported on the way out. Experiments with chimes, squawkers and other sound-makers, are under way to determine the most effective and least harmful method of alerting firemen.

It must be remembered that a revolutionary change in any one branch of fire communications may materially affect other phases of communications if not of fire attack methods generally. A better method of summoning volunteer firemen, for example, by means of "wired radio" and getting them to the scene of an emergency without a public notification, may well necessitate revision of the entire local strategy of attack. That is why it is so essential that fire communications be maintained at highest efficiency.

The business of administering a modern fire service communication system calls for specialists of a high order; for only the best of equipment, and for fullest possible cooperation between fire fighting forces and the communications services. The fire chief who does not encourage this cooperation and does not set a good example himself, cannot hope for the best possible results now or in the years to come.

Hazards from Static Electricity

In industries, such as air conditioning, the manufacture of explosives, grain and flour storage, textiles, and printing, static electricity, under many circumstances, can be a distinct hazard. In a granary, for instance, the air is usually thick with fine flammable grain-dust particles. Grain sliding down a metal chute can result in an accumulation of static charge that, when it discharges in an electric spark, can easily ignite the fine dust particles and result in a dangerous and expensive fire.

For many years, the National Bureau of Standards, Washington 25, D. C., has been consulted by other government agencies on problems arising from the hazards associated with static electricity. To meet a growing demand for this information, the Bureau is presently enlarging its research and standardization program, under the direction of F. L. Hermach, for establishing and evaluating methods of measurement and for determining the properties of materials and equipment used to reduce the hazard. The results of one important phase of the program, an investigation of the conductivity of floor coverings, are being utilized to reduce static electricity hazards in hospitals currently under construction and in Federal munition plants.

Specifications for conductive floors and other equipment depend on a determination of the safe limiting resistances between objects. NBS has participated in determining these limits, evaluating various safety factors, and devising suitable methods applicable to field as well as to laboratory testing of flooring and other materials, and is testing and evaluating various types of conductive floorings, coatings, and waxes. This work is conducted only for Federal and other government agencies.

A conductive floor need be only a

CAIRNS FIRE HELMETS

AMERICA'S "REGULATION" STANDARDS

The "NEW YORKER"

No. 5A

The "original" leather helmet, introduced by CAIRNS in the early 1800's, and steadily improved through the years since. Its specially-tanned top-grain steer hide and superior design make the "NEW YORKER" the safest, toughest, strongest, most durable helmet on the market.

The "SENATOR"

No. 350

Pressed from one piece of rolled aluminum, with corrugated 4-comb crown and reinforced beaded brim, the "SENATOR" meets the preferences of those seeking a light-weight helmet that is comfortable, safe, strong and durable.

The "CLIFTON"

No. 900

Here's the latest of the modern "plastic" helmets—a replica of the "NEW YORKER" in style, but molded in CAIRNS "Flint-Flex" — hard but not brittle, tough and flexible while still keeping its shape, light in weight, non-conducting, chemical-resistant.

The CAIRNS line also includes other helmets in drop-brim and other styles—in leather, aluminum and "Flint-Flex", and in other weights — all of standard CAIRNS QUALITY. We can supply everything the fireman needs for his personal equipment. Write for Catalog 341.

CAIRNS & BRO., Inc. - Allwood, Clifton, N. J.

SINCE 1836

moderately good conductor of static electricity—a resistance of one million ohms or less is ample for this purpose. Such a flooring provides a safe path over which separated electrostatic charges may be reunited as quickly as they were separated. It this this natural inclination of the charges to rapidly reunite that causes the hazard, creates the spark, or provokes the shock.

The most serious hazards, those of possible ignition of flammable gases or dusts, can best be mitigated by reducing the flammability or eliminating exposure to the flammable agent. This also reduces the hazard from other sources of ignition, such as arcs from the normal operation of electric equipment or the presence of hot bodies in the hazardous area. These measures, when coupled with the exclusion from the area of materials such as plastics, wool, and rubber, which have high electrical resistivity and "generate" high electrostatic charges, are often sufficient to reduce the hazard to a negligible value.

More elaborate methods of mitigation depend upon reuniting the charges as fast as they are separated in order to keep the voltage across the affected objects low. This can be accomplished by connecting stationary metallic objects to a common ground, by humidification (which provides a film of moisture of moderate conductivity on most objects), or by installing a conductive floor to provide electrical contact with the objects that move or rest upon it. The latter is generally considered the safest method where persons or moving objects may separate charges. Thus, in hospital operating rooms, for instance, the personnel normally wear shoes with conductive rubber soles, and the floors are made of conductive material. The separated charges developed in a person by walking, rising from a chair, or removing sheeting are then quickly reunited through the flooring before they can be transferred to another person or object.

To determine the resistance characteristics of flooring, a sample is subjected to different voltages under varying conditions of humidity and temperature. The measuring procedure is also considered in the evaluation. The flooring resistance is measured with a special resistance-bridge as a function of pertinent variables such as voltage, humidity, and the type of electrode used in making the measurement. One test on a section of terrazzo flooring showed that for a variation of from 30 to 500 volts, the resistance of the sample decreased from about 4.5 to 1.5 megohms. A low resistance flooring—conductive linoleum—changed from almost 3 megohms at 40 volts to less than 10,000 ohms at only 150 volts.

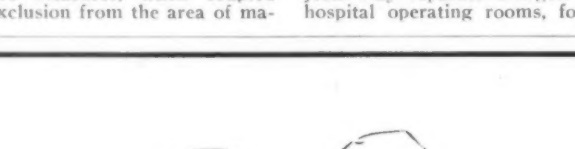
Determination of Safe Upper Limit of Resistance

An accompanying phase of these experiments is a determination of the actual safe upper limit of resistance. For example, tests show that voltages as high as 5000 volts can be developed by such common-everyday-occurrences as getting up from a plastic-covered chair. Oscillographic records, however, indicate that if the resistance between the person and the chair is less than 20 ohms, the voltages will not exceed 300 volts. This is less than the minimum sparking voltage in air and is thus not hazardous.

The magnitude of the electrostatic charges produced by separating objects depends on the material involved, their intimacy of contact, and their surface resistivities. However, many accidents do not arise from these direct effects but rather from the secondary effects resulting when the static electric charges are reunited. For instance, the electric shock experienced when a charged person touches a conducting object, while generally merely annoying, can cause serious damage if the person is precariously balanced on top of a ladder at the time he receives the minor shock. Also, the energies in electrostatic sparks may be large enough to ignite flammable gases or vapors that may be present in an enclosed room.

In addition to the consultatory and testing services to other government agencies, members of the NBS staff have also served on a number of committees that have been organized to formulate rules and procedures governing static electricity preventive practices. In 1942, the Bureau published a circular[1] that outlines the problems and suggests solutions that are as timely today as they were 10 years ago. The circular discusses the nature and the origin of the charges of static electricity arising in industrial processes, and explains the various methods of mitigating the hazards that they introduce. It also gives the quantitative basis for an engineering treatment of the phenomena.

[1]NBS Circular 438, Static Electricity, available from the Superintendent of Documents, Washington 25, D. C., at 10 cents a copy.



WHILE YOU'RE ALL HERE TOGETHER—

We want to extend our sincere greetings on the occasion of your annual *International Association of Fire Chiefs* convention for 1952. And while we're at it, we'd like to add our congratulations for your good work in the past year . . . and wish you even more success during the next.

Our special thanks to all of you who continue to rely on BUCKEYE Fire Department Accessories year after year. We intend making every possible effort to continue to deserve your high regard for the accessories bearing our BUCKEYE trade mark.

Buckeye

FIRE DEPARTMENT ACCESSORIES

BUCKEYE IRON & BRASS WORKS, Dept. E, P.O. BOX 383, DAYTON 1, OHIO

Boston Shed Fire

(*Continued from page 636*)

River, while the boats operated lines from it.

Two firemen were injured; Lt. James Pierce, Eng. 8, suffered a possible fractured ankle when he fell through a hole in the shed roof; Ladderman Albert Sears, Ladder 3, received a puncture wound in one foot.

The first alarm was received from Box 4112 at 1:00 A.M. and brought Engs. 50, 8, 27, 36 and 47 (boat); Lads. 1 and 9. Second alarm, 1:02 A.M., Engs. 32, 6, 10, 39 and 26; Lads. 24, 18.

The third alarm, at 1:08 A.M., brought Engs. 43, 12, 15, 13, 34 and 9. Fire Chief John V. Stapleton declared the fire under control at 1:55 A.M. and the all-out signal was struck at 4:04 A.M.

Incidentally, in the late afternoon of the previous day Boston fire fighters fought a tough working fire in a Roxbury rag shop. Box 2114, the exact reverse of that used to signal the three-bagger, was pulled at 4:54 P.M. Five large hose lines were used on this blaze.

Thanks to CURTIS F. ELIE JR.

Fire Chiefs Wanted for Foreign Service

Civilian Fire Chief positions with the Japan Logistical Command are expected to be available in the near future according to an announcement made by the office of the Secretary of the Army.

The Army estimates they will need forty-two (42) men; and salaries, depending upon the position for which accepted, will range from $4150 to $5060 a year, plus a 10% post differential. Round trip transportation and quarters will be furnished at government expense and the cost of food to employees will be about $45 a month. American citizenship will be a requisite for employment and the preferred age bracket will be from 45 to 55 years. Supervisory experience will be required and the necessary number of years will vary according to the position level of the assignment.

Interested persons should submit a standard form 57, application for federal employment, to Daniel I. Cashin, office, Secretary of Army, 346 Broadway, room 505, New York 13, New York. These forms can be procured from any first or second class Post Office or from the above address. Persons residing outside of the Northeastern States should mail an application to the below listed office nearest his home: Charles C. Furman, office, Secretary of Army, 12th and Pennsylvania Avenues, N. W., Washington, D. C.; John H. Plattenburg, office, Secretary of Army, 433 West Van Buren Street, Chicago, Illinois; R. C. Cross, office, Secretary of Army, 821 Market Street, San Francisco, California.

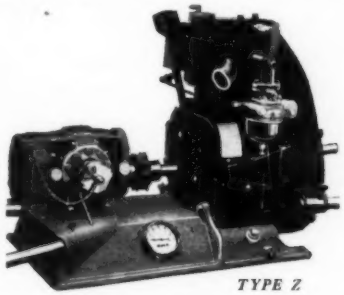
Correction

The price of "Attacking and Extinguishing Interior Fires," by Lloyd Layman was erroneously listed in the book review on Page 503 of the July issue of FIRE ENGINEERING, as $3.50. The book, which is published by the National Fire Protection Association, 60 Batterymarch Street, Boston, Mass., sells for $3.75.

Pacific Pumpers Built 30 Years Ago Still Giving Good Service

Earliest models, as well as famous Type Y Pacific Pumpers continue to be popular and serviceable many years after introduction . . .

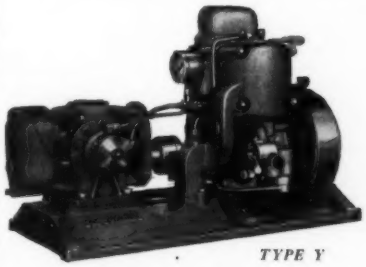
BACK IN 1923, the first Pacific Pumper was introduced. At that time, the use of an efficient pump light enough to be carried by hand into



TYPE Z

rugged terrain yet powerful enough to deliver an effective flow of water for combating forest blazes was a startling innovation. Many of the early Pacific Pumpers are still in service and are still the standby of fire fighters . . . mute testimony to the dependability and stamina built into all Pacific Pumpers, from the first model to those of the present. Such a record could be achieved only because Pacific Pumper continues to supply parts for even the earliest models, including the old-time Type Z shown above.

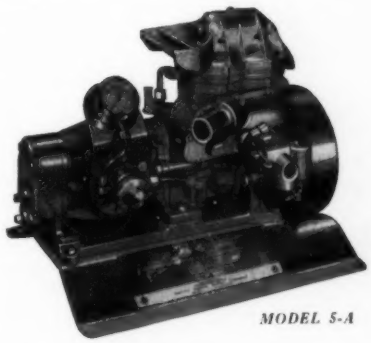
Then came the most powerful unit



TYPE Y

ever built for its weight and size, the famous Type Y Pacific Pumper. Embodying the improvements made possible by years of engineering research and thousands of practical field tests, the Type Y Pumper quickly won the approval of fire fighters and fire fighting authorities. Still available and still the favorite of many of the nation's experienced fire fighters, the Type Y Pacific Pumper was designed for the hardest forest fire control work . . . and has also been found ideal for fire protection in communities, resorts, on estates; for protecting right of ways, bridges, trestles, snow sheds and other types of property.

For the Type NY, widely known as the Navy's "Handy Billy" during World War II, parts are kept in stock in answer to the needs of civilian users.



MODEL 5-A

During the post-war years, the new models of Pacific Pumper have become even lighter, more compact and durable, and more versatile for a variety of purposes. At the request of fire fighters for an efficient unit for air transport, the Pacific Pumper, Model 5-A, was introduced. Weighing only 38 pounds, Model 5-A embodies maximum portability on foot, by truck or by air. Proved in use by public and private forest fire protection agencies, Model 5-A offers the choice of two pumps for volume up to 32 g.p.m. or for pressure up to 275 p.s.i.

Write for illustrations and data on the complete line of Pacific Pumpers, hose and accessories.

FIRE EQUIPMENT DIVISION

PACIFIC MARINE SUPPLY CO.

SEATTLE 1, WASHINGTON

AIR RAID SIREN

produces

LOUDEST warning sound

all the time!

Ordinary sirens lose volume as pitch drops...

THUNDERBOLT'S volume is constant at all pitches . . . *high-low & in-between!*

- **Rotates 360°!**
- **Produces full volume (full 128-140 DB at 100') at low as well as high pitch!**
- **Concentrates sound into beams of warning!**
- **Rotates 2-4 or 8 rpm!**
- **Maximum pitch is adjustable for tone of suitable contrast to local ambient noise levels, without loss of volume!**

Write for information and literature today!

FEDERAL ENTERPRISES, Inc.

Formerly: Federal Electric Company, Inc.

8702 South State Street Chicago 19, Illinois

News of the Manufacturers

(*Continued from page 693*)

Chiefs have requested and recommended the Potter Spiral Fire Escape which provides quick safe exit for so many schools, hospitals, institutions and other buildings all over the country. Now the use of these slides is advocated for the fire stations themselves. They replace the pole, requiring only 36 square feet of floor area. Descent is made sitting up instead of hanging on. There is no waiting at the top, no hazard going down and a quick take-off at the bottom."

For Chiefs who would like to have further information about this slide, it is available from the Potter Fire Escape Company, 6110 North California Avenue, Chicago 45, Illinois.

Superior Opens New Office

The Superior American Fire Alarm and Signal Co., of Meridan, Conn., has recently announced the opening of a Southeastern Sales Office at 206 S. W. Fifteenth St., Fort Lauderdale, Fla.

The new office will distribute and service the complete line of SAFA fire alarm equipment in the following southeastern states: Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Tennessee and Virginia.

All activities will be under the direct supervision of Rue Gewert and Charles Fettweis, both of whom have had many years experience in the fire alarm field.

Batavia Gets New Unit

The Fire Department of Batavia, Ill., has recently added to its apparatus a new unit with novel features. Specifications of this unit are as follows:

Chassis: 1952 Ford; 195 inches wheelbase;

Pump: Barton-American duplex multistage centrifugal, rated capacity 750 g.p.m.;

Booster Tank: Flat construction, made from 12 gauge steel, capacity 300 gallons.

Reel Equipment: 1 reel, with electric rewind (American made) carrying 150 feet of 1-inch booster hose, and one Barton Super-Fog Gun;

Hose Carrying Capacity: 1000 feet of 2½-inch hose;

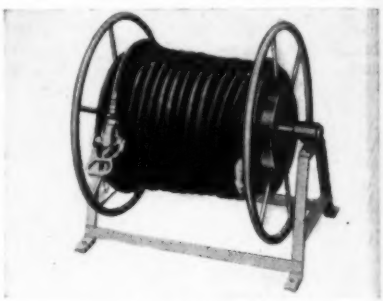
Ladder Equipment: One 53-foot electrically-operated Memco aerial, 118 feet of portable aluminum ladders, mounted on either side of truck and under body;

Other Equipment: Lights, siren, suction hose (both soft and hard), axes, crowbar, etc.

The truck was built by the American Fire Apparatus Co., of Battle Creek, Mich.

Continuous Flow, Quick-Acting One-Man Hose Reel

A new, continuous-flow hose reel for fighting fires has recently been developed by Wirt & Knox Mfg. Co., Sedgley Ave., York and 23rd Sts., Philadelphia 32, Pa. With the new reel, time is saved



New Wirt & Knox hose reel.

because water pressure is available at the hose nozzle even when the hose is coiled on the reel. A swivel joint connection in the pipe line permits application of a full stream of water on the fire while the hose is being unreeled. The kinks and tangles encountered when dry hoses are removed from reels or hangers are eliminated, together with the time required to straighten them.

Porto Has Rubber Gear Pump

Porto Pump now features, among other advantages, rubber pump gear construction. The independently powered, self-sufficient booster pump with its flexible rubber gears will pump dirty water with minimum abrasive wear on the gears. Porto rubber gears are separately driven through self-aligning shock absorbent coupling and thus do not transmit any mechanical power.

Power is derived from a single cylinder, 4-cycle, 6 H.P., air-cooled engine. No priming is necessary. Automatic

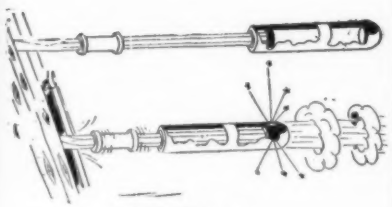
New combination unit recently procured by the Batavia Fire Department.

self-lubricating ball-bearing construction eliminates manual lubrication. Positive automatic relief valve is provided. Porto reportedly lifts water 31.7 feet from suction. It weighs less than 90 lbs. and is easily carried.

The details of these and other features are told in the Porto Pump bulletin which is available from Porto Pump, Inc., 227 Iron St., Detroit 7, Mich.

Putting More Drive in Forcible Entry

There's a new accessory for the running board of the fire truck that puts more force into forcible entry and rescue operations. It is called "Rambar" and, like its name, it is designed to ram, bust, break, breech or batter wherever such action is required.



Rambar in use.

The manufacturer, Sammon & Sons, Lynwood, Calif., and the Exclusive Sales Distributor, John F. Wardlaw, 8508 Sheridell Ave., Rivera, Calif., claim Rambar will open any ordinary door within 15 seconds, "usually without damaging the door."

Firemen and rescue workers should find this tool an adjunct for making openings in most anything, including brick and sheet metal. Its tempered tool-steel bit is the same quality as highest grade cold chisels.

Rambar operates the same way as a hammer and chisel; the outer handle is designed to slide up and down the shaft, imparting the striking power. A good idea of its operation may be had from the accompanying illustration.

Air Force Buys CBM Extinguishers

Stop-Fire, Inc., of 125 Ashland Place, manufacturers of fire extinguishers, have contracted with the U. S. Air Force to produce for the latter 13,000 additional type A-20 hand-operated, portable fire extinguishers, using a new extinguishant, chlorobromomethane (CBM), it was announced by company officials recently.

This model, based on an initial experimental order of 6,000 units, received in February, 1951, was designed specifically for Air Force use.

Fire Master Corp. Formed

Announcement has been made of the formation of the Fire Master Corporation, of 36100 Harper Avenue, Mt. Clemens, Mich. Officers of the new corporation are as follows: President, A. B. Siegfried; Executive Vice-President, J. B. Slaughter; Vice-President of Sales, D. D. Siegfried, and Secretary-Treasurer, H. R. Frank. All of the officers are widely experienced in the production and sales of fire extinguishers, fire trucks and allied products.

The new company expects to be in production within a couple of months.

SIREN FIREMAN'S BOOT

20 KEY FEATURES--YOUR GUARANTEE OF FOOT COMFORT, SAFETY AND LONG WEAR!

TOP NOTCH SIREN

3" HIGHER ST. KING LENGTH FOR QUICK ADJUSTMENT AND MORE PROTECTION

OUTSIDE, EXTRA RUBBER REINFORCEMENT ABOVE KNEE

ENTIRE SKIRT NET LINED FOR AMPLE STRETCH

STURDY INSIDE PULL-ON LOOPS AT KNEE

WARM WOOL LINING

REINFORCED KNEE PATCH OF CREPE RUBBER

VULCANIZED BY AMMONIA CURE—PATENTED EXCLUSIVE FEATURE

SIX PLIES OF FABRIC AND RUBBER THROUGHOUT LEG

SPECIAL STIFFENING COLLAR FOR EASY FITTING

FABRIC AND RUBBER IS "SHINGLED" TO DISTRIBUTE STRAIN

FOURTEEN PLIES OF FABRIC AND RUBBER WITH SPECIAL FRONT STAY

MADE OVER SPECIAL LAST, FULLER THROUGH THE ANKLE AND INSTEP

NINE PLIES OF FABRIC AND RUBBER AT THE VAMP

REINFORCING TOE CAP PROTECTION

EXTRA THICK SUPER-QUALITY SOLES

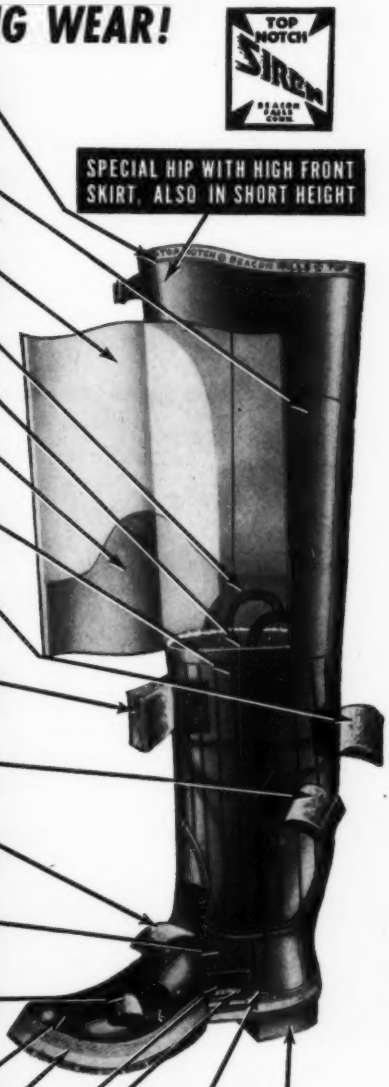
FELT COVERED CUSHION INSOLE

REINFORCED LADDER SHANK

SPECIAL HIP WITH HIGH FRONT SKIRT, ALSO IN SHORT HEIGHT

FULL SIZE HEEL

THICK SIDE GUARDS AT SHANK-PROTECTION AGAINST NAIL OR SPLINTER PUNCTURING



BEACON FALLS RUBBER FOOTWEAR
BEACON FALLS, CONNECTICUT

DO YOU **KNOW** YOUR FIRE EXTINGUISHER WILL OPERATE?

EVERYONE Can Tell At A Glance That Every

Safe-T-meter

DRY CHEMICAL Fire Extinguisher *Is Ready To Go!*

- Safe-T-Meter eliminates the risk of facing a fire with an inoperable extinguisher, when the needle is in the green zone!
- Gauge immediately discloses tampering, unreported use, or improper recharge!
- Expensive maintenance and inspection costs slashed!
- Nitrogen pressured—most efficient performance regardless of weather or temperature changes!
- Most complete portable Dry Chemical line—9 models from 2½ to 30 lbs.—all Underwriters Approved!

SALES AND SERVICE IN ALL PRINCIPAL CITIES

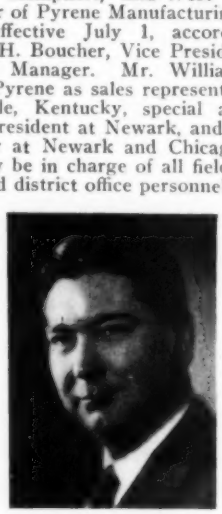
Also Available: SAFETY FIRST'S Conventional Dry Chemical Line, Using CO_2 Pressure Cartridge—6 models—5 to 30 lbs.—Underwriters Approved.

Safety First PRODUCTS CORP., ELMSFORD, NEW YORK

HOWE Fire Truck Equipment Meeting Every Service Since 1872
Centrifugal, Rotary and Piston Pumps Supplied
HOWE FIRE APPARATUS CO., 1402 W. 22nd St., Anderson, Indiana

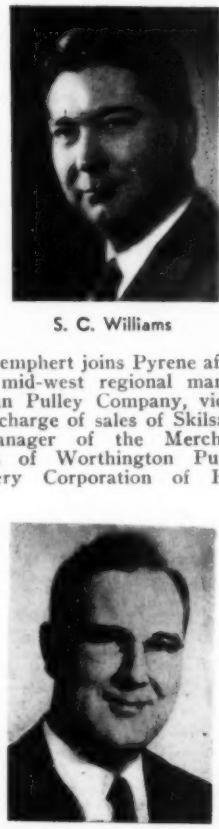
Pyrene Names Williams and Kemphert to Sales Posts

S. C. Williams has been appointed General Field Sales Manager and Walter W. Kemphert, Mid-West District Manager of Pyrene Manufacturing Company, effective July 1, according to George H. Boucher, Vice President and General Manager. Mr. Williams has served Pyrene as sales representative in Louisville, Kentucky, special assistant to the president at Newark, and district manager at Newark and Chicago. He will now be in charge of all field operations and district office personnel.



S. C. Williams

Mr. Kemphert joins Pyrene after serving as mid-west regional manager of American Pulley Company, vice president in charge of sales of Skilsaw, Inc., and manager of the Merchandising Division of Worthington Pump and Machinery Corporation of Harrison, N. J.



Walter W. Kemphert

In addition to marketing the various types of approved fire extinguishers, air foam playpipes and systems made by Pyrene, these men will also sell the dry chemical and carbon dioxide extinguishers, extinguishing systems, fire and smoke detecting systems made by Pyrene's affiliate, C-O-Two Fire Equipment Company.

Vonnegut Hardware Celebrates Its One Hundredth Year

Vonnegut Hardware Co., of Indianapolis, manufacturers of fire and panic devices, will observe its one-hundred anniversary this year. The Vonnegut business was established in 1852 by Clemens Vonnegut Sr. One of his four sons, Franklin Vonnegut, is still actively interested in the business, at the age of 92.

The Iroquois Theatre Fire in Chicago, on Dec. 30, 1903, in which 596 lives were lost, is said to have sparked the

entry of the firm into the fire protection field. Following that tragedy, the company set about creating a device which, when pressure was applied from the inside of a door, would release the latch bolt and open the door.

Extensive tests of the first products proved it practical and workable, and in 1908 the first Von Duprin safe exit device was introduced to the public. Later, when patent rights were secured, the Von Duprin Department of Vonnegut Hardware Co. was organized to manufacture and distribute the equipment, now generally used in places of public assembly such as the U.N. Buildings and new Hotel Statler in Los Angeles.

At present the Von Duprin line includes four different grades of devices in three different types. The Von Duprin engineering staff is continually researching to develop further improvements. A film entitled "Safe Exit" prepared by Von Duprin which is not heavily loaded with 'advertising,' has been shown in more than 500 cities across the nation. This film is offered as a public service in the interest of safety. It is 16mm sound and may be secured by writing the Von Duprin Division, Vonnegut Hardware Co., Indianapolis, Ind.

Republic Rubber Makes Promotions

Richard N. Benson, Peter D. O'Neill and Stephen P. Terlecky have been promoted to the positions of Field Engineers for the Republic Rubber Division, Lee Rubber & Tire Corporation, Youngstown, Ohio.

Benson and O'Neill have been assigned to Republic's Chicago District Office under the supervision of M. W. Clark, District Manager. Terlecky has been assigned to Republic's Philadelphia District Office under District Manager C. R. Conklin.

All of the new Field Engineers have been promoted from Sales Trainees. They were the first three hired under Republic's new Sales Training program which was inaugurated in June of 1951.

O'Neill and Terlecky are graduates of Youngstown College while Benson received his degree from Kent State University.

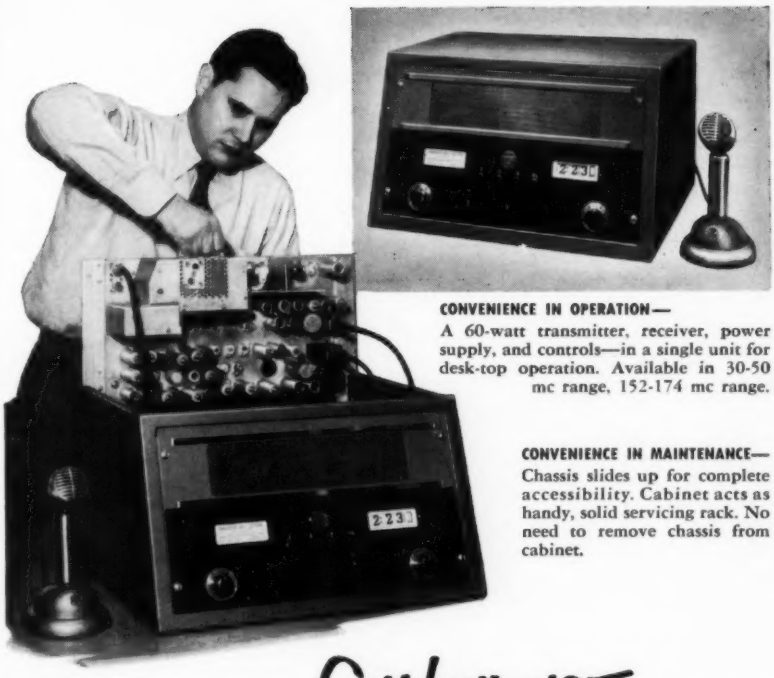
Akron Brass to Show New Products

The Akron Brass Manufacturing Co., Inc., of Wooster, Ohio, reports that it will display several new products at its booth in the exhibit hall of the International Association of Fire Chiefs' conference at Boston on August 25-28. The Company extends an invitation to delegates to visit their booth and inspect these new items.

Twin State Firemen Have School

Upwards of 200 firemen representing 14 towns in the Twin State Firemen's Association of New Hampshire attended the annual Fire School held in Whitefield, N. H., Sunday, June 22. The Association-sponsored School program, lasting all day, included ten demonstrations of ladder and hose evolutions, rescue team work, and actual fire extinguishing, climax of which was the destruction of the "exhibition" building by fire.

The Whitefield Fire Department, Chief George H. Fournier, served as host to the visiting firemen. In addition to the serious side, there were contests between teams, and a water polo game.



CONVENIENCE IN OPERATION—
A 60-watt transmitter, receiver, power supply, and controls—in a single unit for desk-top operation. Available in 30-50 mc range, 152-174 mc range.

CONVENIENCE IN MAINTENANCE—
Chassis slides up for complete accessibility. Cabinet acts as handy, solid servicing rack. No need to remove chassis from cabinet.

NOW see what CONVENIENCE means with RCA's new 2-way radio station

CONVENIENT!
Compact, space-saving design
Complete base station in a single desk-top unit using less than 3½ square feet of desk space—saves valuable floor space.

CONVENIENT!
Up to 3 transmitter channels, 2 receiver channels
Designed for up to 3-channel transmission and 2-channel reception where required. Lights on front panel indicate frequency in use.

CONVENIENT!
Easy to install and service
Just plug in transmission line and AC power and you are ready to operate. Lift-out chassis for servicing in cabinet. Metering plugs for easy checking.

CONVENIENT!
Local or remote operation
Choice of local or remote control base station in single, compact cabinet. Chassis also available in standard cabinet rack or weatherproof, pole-mounting box.

For further details on the new RCA 60-watt desk station, MAIL COUPON NOW

Dept. 50H, RCA Engineering Products,
Camden, New Jersey

( ) Please send me information on new Carfone desk station.

Also send me information on 2-Way Radio for:
( ) General Industry (Utilities, Construction, Petroleum, Lumber, Mining, etc.)
( ) Transportation (Trucks, Buses, Taxis) ( ) Public Safety (Police, Fire, Ranger)

Name_____

Title_____

Organization_____

Address_____

City_____ Zone_____ State_____

RCA **RADIO CORPORATION of AMERICA**
MOBILE COMMUNICATIONS CAMDEN, N.J.

Among the Buffs

By Paul C. Ditzel

WARNER Bros. Studios burned again* recently in a blaze that was perhaps the biggest, insofar as area of fire was concerned, that this correspondent had ever seen. Only in the never-never land of Hollywood could such an extravaganza take place.

I was in Los Angeles, seven miles as the crow would fly, from the site of Warner Bros. I noticed a tremendous loom-up and checked with the city desk to learn that Warner's was burning again. Never again will I tell of the 5-11 and 3 special alarm fires in Chicago. The job at Warner Bros. was at least that, but when the fire spread to a brush-covered mountainside, the firemen really had their hands full. The brush fire itself was a good 5-11!

Los Angeles City and Los Angeles County Fire Departments sent in at least a dozen pumpers, many of them two-piece companies, to assist Burbank and Glendale firemen. At the same time as the Warner Bros. fire, Los Angeles had two other good-sized workers, one in the industrial area and a big brush fire near Hollywood.

Alvin Baer of the Third Alarmers in New York arrived in Los Angeles while the Warner Bros. fire was going on. He was unable to respond, however. While we were able to swap a few fire stories over the phone, I was unfortunately not able to meet Alvin, mainly because of the odd hours I work.

Tom Jewett, Jr., 6442 McGee Ave., Kansas City 5, Mo., writing on his new fire stationery, brings me up to date on the Kansas City Fire Department. Tom, who is with the Kansas City Star newspaper, says this column was responsible for his obtaining a long sought-after book on the history of the steam fire engine. Glad to hear this column was able to help you, Tom, and thanks for the kind words you wrote to Editor Fred Shepperd.

Tom, who says he now has 40 bound books on fire history and is looking for more, although they are getting harder to find, says things have been slow in KC.

"No big ones, but to be on the safe side we unloaded four 1,000 gallon American LaFrance pumpers and one 100 foot American LaFrance aerial this morning. A similar aerial arrived last week and two more 1,000 gallon pumpers will be in July 1," he says.

From Buffalo, N. Y., comes word that long overdue recognition has come to Dr. Max A. Schneider for his volunteer services on behalf of the Buffalo and suburban fire departments. Maxie and I took in many second and third alarmers in Buffalo and the feature of many of the fires I covered there as a Buffalo Evening News police reporter was Maxie's untiring work.

Dr. Schneider recently received his diploma as assistant resident in medicine at Buffalo General Hospital and was awarded the Nelson G. Russell Fellowship in Medicine. The Buffalo Fire Fighters, Local 282, AFL, presented Dr. Schneider with a gift of medical equipment upon his graduation.

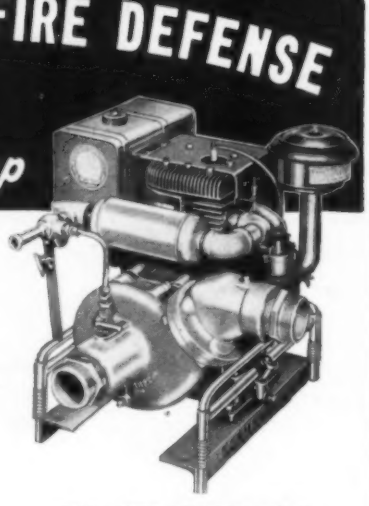
Edward M. Cotter, president of the Buffalo Fire Fighters, gave Maxie a blood pressure measuring apparatus and a sigmoidoscope (what's that, Maxie?). After the presentation, he left to attend a graduation party for a girl whose life he saved recently.

Maxie, who averages about 75 emergency calls a year, helped direct rescue operations at the recent collision of a grain-boat and a gasoline barge in the Buffalo harbor. A major fire followed the crash. Earnest fellows like Dr. Schneider are a credit to a profession often criticized for its overzealous desire for money. All of Maxie's emergency work on behalf of the Buffalo Fire Department was done without charge.

R. H. Rossiter of 1301 S. 13th St., Burlington, Ia., writes of the well coordinated work of the Burlington "Third Alarmers." The volunteer group of 20 club members is alerted by a police desk sergeant, who calls the Third Alarmers out on a Signal 3. While one call is being made, another is being placed. A recent time check showed the speed of the calls. An alarm was called to the Central Station at 6:01. Signal 3 was given at 6:10 and by 6:25 all Third Alarmers were at the fire. Each member's car is equipped with a flashing blue light and identifying plate. The club operates a coffee wagon and helps set up traffic barriers, salvage work, transferring hose and getting equipment for the firemen. Two members patrol the fire area looking for weakened walls, live wires and watch the regular firemen to see that one has not disappeared into a building and run into trouble. Club

*The first fire was described in the July, 1933 issue of FIRE ENGINEERING.

FOR BETTER FIRE DEFENSE
The DUAL
Fire Fighter pump

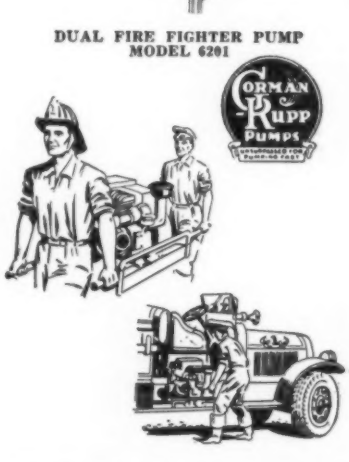


DUAL FIRE FIGHTER PUMP
MODEL 6201

Fire departments everywhere are enthusiastic in their praise of the "Dual Fire Fighter" pump. It has, on numerous occasions, saved property from costly fire damage, bringing fires quickly under control in isolated localities where large truck pumpers could not reach the source of water.

The "Dual Fire Fighter" is especially designed for fire fighting equipment. It is used to relay water to the truck pumper or it will fight fires direct. Mounted on a truck or trailer it is an effective piece of fire fighting equipment for rural volunteer fire departments.

- As a booster pump it will deliver 175 g.p.m. through 300 ft. of 2½ in. hose to the top of a hill 50 ft. high.
- For fighting fire direct it will throw 100 g.p.m. at 80 lbs. or 80 g.p.m. at 88 lbs. pressure -- Capacity sufficient to supply two 1½ in. lines.
- It primes in 15 to 30 seconds. It weighs only 162 lbs. Equipped with carrying handles, easily carried by two men.



Quick action of the Dual Fire Fighter may assist you in saving costly fire losses.

Ask for Bulletin No. 9-FD-11

The "Dual Fire Fighter" requires very little space on the pumper. Pump is integral with 4 cycle, single cylinder, air cooled engine of 8¼ H.P. Every pump is factory tested before shipping.

THE GORMAN-RUPP COMPANY
MANSFIELD, OHIO

members, however, stay two hose lengths from the danger zone.

In Singapore, a fire buff spotted a fire engine responding. The fire engine was going in the opposite direction he was, but the buff made a U-turn and gave chase.

For two miles he grinned at the firemen. They cheerfully waved back. The fire engine turned into a suburban road and stopped in front of a new bungalow which was fully involved. The buff's grin vanished. The bungalow was his.

Bill Conradi, Sr., of 66 Wakeman Ave., Newark 4, N. J., of the Bell and Siren Club, Inc., sends along a two page spread from the Newark Sunday News. The exceptionally well-done color section shows the Bell and Siren Club in action.

Titled, "Newark's Volunteer Firemen," the picture series and accompanying article says the 50 members of Bell and Siren are alerted by Mrs. Conradi. One of the color photos shows the attractive Mrs. Conradi telephoning club members with news of a multiple alarm. One thing I don't understand, however. Near Chief Dispatcher (Mrs.) Conradi is Bill's pet Dalmatian. Now, Bill, if your genuine fire dog is to live up to its name we must expect a little more excitement from the dog when the alarm bell rings!

Stop me if you've heard this before: But I have again moved. The "assistant chief" and I have taken a place high up in the hills and we have a magnificent view of the surrounding area. We can see downtown Los Angeles and Burbank from our hilltop post, so there's almost no need for a fire radio. The new address (and this one is permanent for a while—or did I say that before) is 2242 Princeton Ave., Los Angeles 26, Calif. I'm still pecking away on the Associated Press rewrite desk and you can generally find me there at the most horrible hours: P.O. Box 2416, Terminal Annex, Los Angeles 54, Calif. I'm running short on buff club anecdotes, so if you have one, send it along.

The First CO_2 Automatic System

A Cincinnati doctor is evidently working in the right direction. He has secured patents on a device to extinguish fires by carbonic acid gas, the apparatus working automatically. Not only is it a self-applier, but an alarm. For one room, a vessel the size of a water cooler is placed in one corner. This is partly filled with lime water. Above the lime water is a tilting bottom or lid, upon which is placed an open jar containing sulphuric acid. A cord joined at intervals of links of fusible metal passes to the wall of the room, and holds this movable bottom in place. This fusible composition melts at 128 degrees, the cord separates, movable lid tilts, the sulphuric acid falls into the lime water, and carbonic acid gas is generated in sufficient quantities to extinguish fire in a room 40 x 15 and 15 feet high. This process sounds an alarm. For large factories and tenements one generator four feet high by two in diamter is sufficient. By a simple device the gas is conveyed to any portion of the building where the fire may be. It also sounds a continuous alarm loud enough to wake any one in the neighborhood. The company proposes to place the apparatus in houses gratis and charge a small rental.—"The Fireman's Journal," (predecessor of FIRE ENGINEERING) February 4, 1882.

A practical, adaptable car for any FIRE DEPARTMENT

SQUAD,
RESCUE,
EMERGENCY USE

Built by Sharpsville

YOU CAN HAVE this body built onto any truck chassis . . . according to your own department needs. This particular model was designed and equipped by Sharpsville for emergency use, including a pump, fog and foam system and life saving equipment. (See equipment list.) However, an infinite number of variations is possible to suit it to your requirements. You will be delighted with the many features of comfort and convenience. The welded body construction, the piano-hinged cabinet doors, the accessibility of equipment, and the fine interior appointments are marks of Sharpsville's custom-built superiority. Yet production line methods keep the cost surprisingly reasonable.

Write for Complete Information

LIST OF EQUIPMENT

THIS particular unit is equipped with: Booster pump, reel and fog gun and 175-gallon tank. Rescue and emergency equipment. Built with 5 cabinets on each side and 2 at rear, each cabinet with light. Body construction includes bus-type sliding windows, double doors at rear, full-length seats and backs along both sides and across front of body, upholstery fire-resistant, and spun glass insulation in roof. Six dome lights in body and two lights to illuminate rear step. Several possible variations: a major pump or a high pressure pump can be supplied instead of a booster pump, and other equipment can be furnished to meet service requirements. Can be furnished without any pump system or as a straight squad car.

SHARPSVILLE STEEL FABRICATORS, Inc.
Sharpsville, Pa.
Established 1860 Incorporated 1907
ALSO BUILDERS OF STORAGE AND TRUCK TANKS

World Wide Fire News

By Roi B. Woolley

I.C.C. Curbs Some Trucking of Explosives

Coming at a time when it is reported pressure is being exerted upon Congress to soften the regulations governing the transportation of explosives over the nation's highways, this item of news is encouraging:

WASHINGTON, June 25—Riss & Co., New York trucking concern, has been ordered by the Interstate Commerce Commission to cease hauling dangerous explosives over many of the routes it has been using.

The commission made public today an order, which becomes effective on July 10, that is expected to reduce considerably the trucking of explosives in at least sixteen states.

Unauthorized routes on which Riss will have to discontinue carrying explosives when the order becomes effective pass through or terminate in Arkansas, Colorado, Delaware, Illinois, Indiana, Kentucky, Maryland, Massachusetts, Nebraska, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Rhode Island and Virginia.

The Riss organization has had applications on file with the commission for several years requesting that temporary authority it holds to truck explosives be made permanent. Last year, sixty other truckers filed applications for authority to carry explosives. Many associations and groups interested in safety (including the International Association of Fire Chiefs and many of its Divisions) learned of it and attended the hearings to oppose the truckers.

* * *

Death and Destruction Dive Into Salisbury

A Royal Air Force dive bomber on a test flight from a secret experimental airfield plunged out of control into a housing development near Salisbury, England, on July 2, killing two persons in the plane and injuring nine others on the ground.

The exploding tanks of the plane set eleven houses afire in the residential suburb of the city. The plane was a twin-engined Brigand light bomber. It had been used by British forces in Malaya in dive-bombing operations against Communist guerillas.

Scores of startled and horrified civilians saw the pilot try to right his crippled plane in an effort to keep it aloft until he had cleared the residential development. Witnesses reported flames coming from one engine, and the plane made a noise like "a thousand slamming doors" as it tore down on the group of dwellings.

All the victims, mostly children, who suffered from burns, will recover, it is reported.

* * *

Boston's Back Bay Bombed

Fate was kind to Boston's famous Back Bay area July 12th, when two loaded auxiliary gasoline fuel tanks were dropped accidentally from an Air National Guard fighter plane and smashed and exploded within 100 feet of each other with the force of small bombs.

The two tanks, said to have fallen 1,000 feet before crashing, set fire to a parked automobile, and blasted a crater in front of an apartment building on Peterboro street. A woman, asleep in the building, was reported thrown to the floor by the explosions, but miraculously no one was injured.

The plane, one of 17 which left Logan Airport on a routine training flight to Spaatz Field outside Reading, Pa., was not itself involved in the crash.

One of the 110-gallon tanks landed on top of the convertible automobile, set it afire and littered the street with debris. Firemen quickly controlled the fires. The other, fortunately missed a 5-story apartment building.

* * *

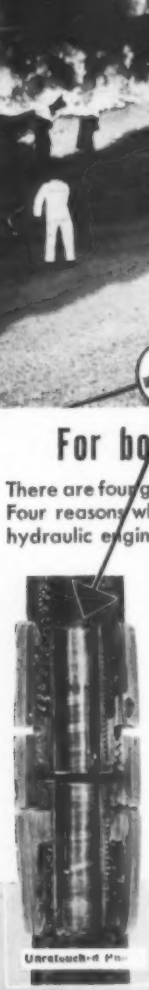
From the World Wide Fire News Ticker

In Croyden, England, bomb explosions, raging fires, diving planes and screaming fire truck and ambulance sirens, all to stimulate civil defense volunteering, disturbed church services no end on June 29, last. Some clergymen "took a dim view of the proceedings," complained the wayward press. . . . On June 30, the Lambert Lodge Home for the Aged in Toronto was swept by fire but the 700 inmates escaped with no casualties. . . . Five persons were killed June 19 in an explosion at the Nobel dynamite plant west of Turin, Italy. The victims, four women and a man, were working on dynamite caps inside a small isolated building. . . . Leading singers and prima donnas, helped by chorus girls, extinguished a fire at the Budapest opera house June 21, shortly after the audience had left. The stage collapsed in ruins and the valuable music library was destroyed, but the safety curtain was lowered in time to save the opera house from destruction (anonymous contrib').

AIR PORT FIRE FIGHTERS SPECIFY BAR-WAY COUPLINGS

For booster and high pressure fog lines

There are four good reasons why the fire fighters specify BAR-WAY couplings. Four reasons why BAR-WAY couplings are growing in favour with firemen, hydraulic engineers and others who insist on the best.



→ **SAFETY**—The coupling becomes the *strongest part of the hose line.* Tested to 3000 pounds pressure and 500 pounds pull.

→ **FULL FLOW**—No suppression of flow in coupling. No shrinkage of hose at coupling.

→ **FLEXIBILITY**—Reels smoother. Easily replaced. Nothing to catch on corners or underbrush.

→ **BETTER MADE**—Accurately machined, always the same, interchangeable. WILL NOT FAIL.

Send for our free pamphlet. Gives detailed specifications for all types of pressure hose.

BAR-WAY MFG. CO.

STAMFORD, CONN.

WEST COAST REPRESENTATIVE } W. D. RIGDON, 383 Brannan Street, San Francisco 7, Calif.

. . . A fire, caused by sparks from a woman's baking oven in Cairo, Egypt, falling upon a pile of cotton waste, was spread by pigeons which caught fire and flew to nearby roosts. The flames destroyed 160 houses in Midelwan village. . . . (Thanks, R. H. Davidson.) . . . A paralytic died in Perth Amboy General Hospital from burns which police say he suffered when trapped in his wheelchair in a grass fire on the lawn of his home in Madison, N. J., Township. . . . In Manchester, England, 20 persons aboard a roller coaster escaped injury when a $150,000 fire spread through the structure. . . . In Santiago de Compostela, Spain, rescue workers clawed through burning wreckage of freight cars loaded with explosives and gasoline which broke loose from a train, sped down a grade and crashed into the crack Galicia Express. Eleven dead were pulled from wreckage soon after the collision but many more casualties were feared. . . . West German police came up in May with a new "secret weapon" for use against Communist rioters—a giant four-muzzled, or "nozzled" water cannon that squirts powerful jets of water "capable of knocking a man flat at 225 feet." The weapon was revealed in anticipation of Red demonstrations soon after signing of western Allied-West-German peace contract. . . . An artillery magazine exploded near Burgos, Spain, May 20, killing seven soldiers and wounding three others. . . . Fire, believed caused by a short circuit, did considerable damage to a studio in the Metropolitan Opera building, 1425 Broadway, New York City. Firemen held the blaze to the flat. . . . Thirty persons were injured the night of May 20th in a panic which followed a bomb explosion in a theatre in Buenos Aires. . . . An explosion in the new $750,000 Union Hospital, Dover, O., blew out all windows, injured one patient on May 23. Blast caused estimated $100,000 loss. Believed due to leaking natural gas. . . . Five men were burned slightly June 2 when fire swept through the engine room of the ocean-going freighter Anguslake, undergoing repairs in the Lachine Canal basin. Cause said to be welder's torch. Thirty other men escaped. . . . The 8,000-ton British ship Swan Valley arrived in Perth, Australia, after having steamed 750 miles across the Indian Ocean with a cargo of burning coal. She was allowed in port only after an analytical chemist had tested for poisonous gases with two canaries. . . . Chinese dispatches reported an explosion April 26 in the engine room of a Russian freighter at a Whampoa anchorage. Ship was reportedly being unloaded by gangs of coolies at the time. Authorities arrested most of them. . . .

Phone Strike Blamed for Alarm Delay

Three East St. Louis homes were destroyed by fire April 9, 1952, while neighbors frantically tried to reach the fire department through switchboards whose operators had left their post because of the telephone strike. The first fire apparatus did not arrive on the scene until 15 minutes after discovery of the fire in one of the three houses.

Destroyed were frame residences at 1710, 1712, and 1718 Frederick St. Damage was estimated at $15,000 to the buildings and contents.

The fire started in the kitchen of the

YOU CAN BE *Sure*
WHEN YOU USE
Shuredry

. . . Yes, sure that you're getting a salvage cover that is lighter, easier to handle — extra pliable so that it can be spread more quickly. And, Shuredry Salvage Covers are pressure impregnated with the exclusive Fulton dry treatment — top every test for water penetration and seepage! They're approved by National Board of Fire Underwriters and by Factory Mutual Laboratories. You're SURE to reduce fire losses with SHUREDRY Salvage Covers.

SEE YOUR FIRE EQUIPMENT DEALER

Fulton
BAG & COTTON MILLS
ATLANTA • ST. LOUIS • DALLAS • DENVER • KANSAS CITY, Kans. • CRYSTAL (Minneapolis), Minn. • NEW ORLEANS • LOS ANGELES • NEW YORK • WINTER HAVEN, Fla.

DEPENDABLE DRESSINGS

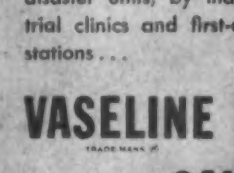
for FIRST AID, for EMERGENCY for DISASTER, for DEFENSE

With a distinguished record of use by the medical services of the Armed Forces, by other governmental agencies, by hospitals, by emergency and disaster units, by industrial clinics and first-aid stations . . .

. . . always STERILE, always READY for immediate and easy application to dress a burn, an abrasion, and other surface injuries.

VASELINE STERILE PETROLATUM GAUZE DRESSINGS

NOW IN THREE SIZES:



No. 1: 3" x 36" (6 in carton)
No. 2: 3" x 18" (12 in carton)
No. 3: 6" x 36" (6 in carton)

Obtainable from your regular source of medical supplies

have been adopted by surgeons as standard procedure, by nurses as preferred matériel, by professionally-trained aid personnel as the compact, ready-made, ready-to-apply dressing of their choice.

Specify these superior dressings in the foil-envelopes to your supplier.

CHESEBROUGH MFG. CO., Cons'd

Professional Products Division • New York 4, N. Y.

VASELINE IS THE REGISTERED TRADE-MARK OF THE CHESEBROUGH MFG. CO., CONS'D

QRS

Flameproof Chemicals

QRS De Luxe for draperies.
QRS No. 8 Clear Xmas tree flameproofing; also for foliage, wood.
QRS No. 57 flameproof paint for Xmas trees. Colors white or green. Seals needles on. Tree looks fresh after three months.

WRITE FOR FREE CATALOG

Q R S NEON CORPORATION
Chemical and Process Division
170 North Halstead Pasadena 8, California

six-room, 1½-story home at 1712, when the family were in the rear yard. They noticed flames well under way. Neighbors then began their attempts to reach the fire department.

Meanwhile the fire spread to closely set homes on either side. Asst. Fire Chief Edgar Dombach, who said the fire department answered the alarm as soon as it was received, personally checked on the delay. He interviewed neighbors and said that in each case the person reported he had attempted to contact the fire department by dialing "operator."

Due to the walkout, with supervisors manning switchboards on a limited service basis, there were long delays before supervisor-operators answered. Dombach said that if the fire department's number had been dialed directly, there would have been an immediate response as dial telephones have not been affected by the work stoppage.

ILLINOIS FIREMEN'S ASSOCIATION BULLETIN

Convention Dates

Aug. 25-28—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting, Boston, Mass. Secretary-Treasurer, Daniel H. Tierney, 8 Robbins Road, Arlington 74, Mass. Headquarters Manager, J. E. Jagger, Hotel Manhattan Broadway and 32nd St., New York, N. Y.

Aug. 25-29—FLORIDA STATE FIRE COLLEGE. Units 104, 105, 204. For information contact Chief W. H. Barnett, P. O. Box 711, Ocala, Fla., Superintendent.

Aug. 31-Sept. 4—DOMINION ASSOCIATION OF FIRE CHIEFS. Annual meeting, St. John, N. B. Secretary, Chief Allan H. Clark, Lakefield, Ont.

Sept. 1-5—FLORIDA STATE FIRE COLLEGE. Units 106, 107, 205. For information contact Chief W. H. Barnett, P. O. Box 711, Ocala, Fla., Superintendent.

Sept. 2-5—OHIO STATE FIRE SCHOOL. Annual meeting, Ohio State University, Columbus, Ohio. For information contact Foss H. Gray, Assistant Director, Division of State Fire Marshal, Columbus 15, Ohio.

Sept. 2-5—MARYLAND SHORT COURSE FOR FIREMEN. Annual meeting, University of Maryland, College Park, Md. Director, Robert C. Byrus, Fire Service Extension, University of Maryland, College Park, Md.

Sept. 8-12—VIRGINIA STATE FIRE SCHOOL. Annual meeting, Number 9 Fire Station, Norfolk, Va. Out of state fire personnel will be welcome. No fees for registration. For information contact: Fire Marshal Clay A. Easterly, Director, P. O. Box 1112, Martinsville, Va.

Sept. 11-12—JEFFERSON COUNTY VOLUNTEER FIREMEN'S ASSOCIATION. Annual tournament and convention. Black River, N. Y. Secretary, Jack Farrell, 513 Lakeview Drive, Dexter, N. Y.

Sept. 14-17—PACIFIC COAST INTER-MOUNTAIN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Las Vegas, Nev. Secretary-Treasurer, Jay W. Stevens, Merchant Exchange Building, San Francisco, Calif.

Sept. 16-17—IOWA FIREMEN'S ASSOCIATION. Annual meeting and tournament, Bellevue, Ia. Secretary-Treasurer, Carl H. Fuchs, 2749 Kinsey Avenue, Des Moines, Ia.

Sept. 17-19—OHIO FIRE BRIGADES ASSOCIATION. Annual meeting, Columbus, Ohio. For information contact the Association at Box 66, Station A, Columbus, Ohio.

Sept. 29-Oct. 2—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual meeting, Hotel Statler, Boston, Mass. Secretary, Irvin Shulsinger, 130 West Forty-Second Street, New York 36, N. Y.

Oct. 20-22—THE NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting Kearney, Neb. Secretary-Treasurer, Russell D. Salak, P. O. Box 312, Schuyler, Neb.

Oct. 24-25—INTERNATIONAL RESCUE AND FIRST AID ASSOCIATION. Annual meeting, Asbury Park, N. J. President, Julian S. Wise, Box 441, Roanoke 5, Va.

Kodak Plant Has Another Fire

Fire, originating in a wooden air conditioning tower atop the 7-story Eastman Kodak Camera Works building on the morning of July 14, last, was fought jointly by the Kodak plant fire brigade and a two-alarm assignment of Rochester, N. Y., firemen under Chief John Battery.

Over 7,000 workers vacated the premises when the alarm sounded, most of them remaining to watch fire fighters bring the smoky, hard-to-reach blaze under control. The fire was discovered about 9:30 A. M. by workers on the 10th floor of the adjoining Kodak Tower building on State Street. The plant alarm brought fire wardens and local firemen, who were joined by Rochester forces from Battalion 2 under Batt. Chief Francis Fox. Fox called for more equipment on a second alarm seven minutes later and five ladders, eight pumpers and additional fire units converged on the scene.

The blaze, which raged 100 feet above the street, was confined to three large air conditioning towers. Investigators, unable to pinpoint the cause, surmised that failure of one of the giant fans, or an overheated motor, might have been the source. At any rate, the fans themselves reportedly fanned the flames, which spread from one to another of the units and upon the custom made construction of redwood. The towers are used to cool off hot water drawn from the basement air conditioning machinery. Three-bladed fans, 15 feet in diameter, surmount the towers, drawing fresh outside air through the streams of water in the towers.

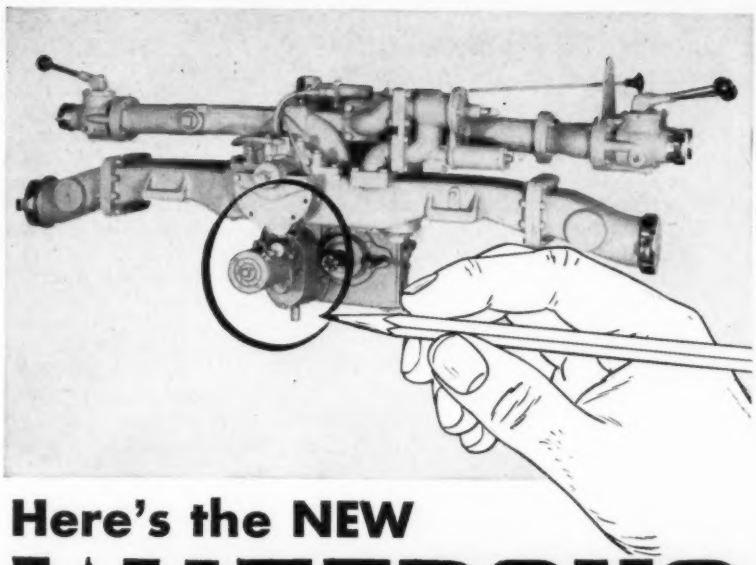
Flames leaped the 10 feet aisles separating the towers until all three were involved. The resultant fire and smoke could be seen from a considerable distance and led to reports of another serious fire in the vast plant. (Last November a stubborn blaze caused an estimated $2 million loss in a building where sensitized paper is manufactured.)

Fire fighters laid out over a mile of hose and attacked the fire from ladders and from the street level, as well as from the roof and the interior of Building 16 on which the towers are located. Building 16 manufactures cameras and film magazines, and contains some offices. The fire was brought under control within half an hour, but not before considerable water found its way into part of the structure.

York County C.D. Force Includes 30 Departments

Firemen from Toronto and the 29 York County municipalities will form the civil defense team in the event of attack on the Greater Toronto area as the result of a mutual aid system being organized by the Toronto and York civil defense committee. Plans for the system, which will bring a total of 1,455 firemen and trained volunteers under one command for any emergency that might occur, have been announced by Platoon Chief William McCallum of the Toronto Fire Department.

Core of the service,—which will include firemen from Sutton on the North, Markham on the East, and Woodbridge in the West, will be the 892 firemen, 31 pieces of fire apparatus and one fire boat from the City of Toronto. A secondary force will be made up of 520 suburban firemen, of which nearly half are permanent men. JOHN KARL LEE.

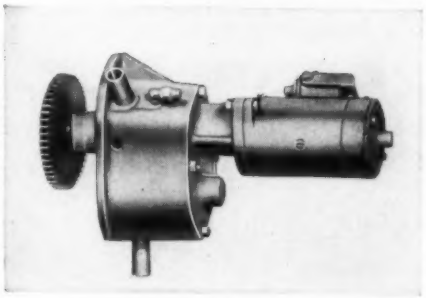


Here's the NEW

WATEROUS

Electric

PRIMING PUMP



SIMPLE
Close the discharge valves and push button.

FAST
Priming time is well below that required by N.B.F.U. and N.F.P.A. specifications.

POSITIVE
The same type rotary gear primer used so successfully, for many years, on WATEROUS fire pumps.

DEPENDABLE
No vacuum cylinders or clutch to stick, wear out or grab; no possible way for water to get into gear case or engine. May be driven mechanically through fire pump gears.

Write for new bulletin F-548

Waterous
DEPENDABLE PUMPS SINCE 1886

WATEROUS COMPANY
80 EAST FILLMORE AVE.
ST. PAUL 1, MINNESOTA

Questions and Answers

Net Pump Horsepower

To the editor:

I have a problem I would like to submit for either verification or correction. A pumping engine employing a 4½-inch suction is delivering 750 gallons per minute. Engine pressure is 150 pounds per square inch. The engine is operating from a hydrant with 40 pounds per square inch residual. Is the hydrant actually producing 17.49 horsepower to the water horsepower (as we refer to it) of the pump?

Example: A pumping engine is capable of discharging 750 gpm against a pressure of 150 psi with a hydrant residual of 40 psi. Therefore is it correct to assume that taking the weight of water at 8.35 pounds and multiplying by the discharge would equal the pounds of water discharged per minute (8.35 x 750 = 6,262.5 pounds). A pressure of 150 psi is equal to a head of 150 x 2.304 feet, which is 345.6 feet. 750 gpm at a pressure of 150 psi = 6262.5 x 345.6, or 2,164,320, and that divided by 33,000 feet pounds per minute (1 horsepower) is 65.59 horsepower approximately. Hydrant supplying 750 gpm with 40 psi residual pressure equals 6262.5 pounds per minute. 40 psi hydrant residual equals 40 x 2.304 equals 92.16 feet x 6262.5 pounds equals 577,152, divided by 33,000 which equals 17.49 horsepower. If water horsepower of pump equals 65.59 h.p. minus 17.49 h.p., the actual horsepower prooduced by the pump is 48.10.

A. L. R.

Answer: Your calculations for water horsepower are correct. But there is one point which has been overlooked in the calculation for hydrant residual pressure effect. No pump utilizes one hundred per cent of the pressure delivered to it by a hydrant. The centrifugal pump uses the greater portion of the hydrant pressure, but the rotary and piston pumps utilize less. For this reason, 17.49 horsepower, which represents the hydraulic horsepower furnished to the pumper by the hydrant pressure, is excessive. This figure would be nearer to 14 or 15 pounds. Furthermore, the friction loss in the mechanism of the pump would further reduce the effect of the hydrant pressure.

It must be remembered that the water horsepower of a pumper, calculated from the discharge from the pumper, is the net horsepower after all losses from the intake to the discharge are taken into account. These losses vary with the design of the pump, and other factors.

Pumper Performance

To the Editor:

In the January issue a question was asked about a 700-gallon pumper. Your answer was an engine pressure of 75.76 pounds and a discharge of 791 gallons. Is this correct? Should it not be 58 pounds pressure and 691 gallons discharge?

L. J. B.

Answer: The solution given in "Questions and Answers" in our January issue is correct. Where you have two parallel lines of hose, fed by the same pumper, the value of "L" in the formula is the length of either line, *not* the length of the *two lines in series*. The same applies if there were four 100-foot lines stretched. Hence the value of "L" would be 2 rather than 8.

Comparison of Nozzles

To the Editor:

What is the single nozzle equivalent to two ¾-inch nozzle tips, and how do you arrive at this figure?

L. C. S.

Answer: A single nozzle equivalent to two ¾-inch nozzles is a 1-inch nozzle.

The method for finding a single nozzle which is equal in area to two nozzles of given size is to proceed as follows:

Square each of the two given nozzle diameters. Add these squares and then extract the square root of the sum.

In the question you ask, two ¾-inch

You can do a fine educational job in behalf of safety by showing "SAFE EXIT," a 20-minute, 16 mm, black and white sound movie, prepared for you—*absolutely free*—by the makers of Von Duprin Fire and Panic Exit Devices.

"SAFE EXIT" is a true public service film—not a product story at all—dramatically filmed and edited for the layman to understand—and benefit by. Use this film as the basis for a lively safety program in your plant.

You pay nothing—not even postage—to show "SAFE EXIT" in your community. Simply fill out and mail the handy booking request below.

VONNEGUT HARDWARE CO.
VON DUPRIN DIVISION
Indianapolis 9, Indiana

Date .....

YES, we wish to show the 16 mm, sound, B & W movie, "SAFE EXIT."

Date Desired: ..... or .....
(PLEASE LIST ALTERNATE)

Type of Audience: .....
(SCHOOL, LUNCHEON CLUB, TRAINING, ETC.)

Expected Attendance .....

We understand film is absolutely rent-free, postage paid.
We agree to return film the day following our showing.

Organization .....

Authorized by .....

Address .....

City ..... State .....

Von Duprin PANIC DEVICES ASSURE SAFE EXIT

nozzles are under consideration. Square each nozzle, and we have:

.75 x .75 = .5625
.75 x .75 = .5625
.5625 + .5625 = 1.125

The square root of 1.125 is 1.06.

The nearest standard size nozzle to a nozzle of 1.06 inches diameter is a 1-inch nozzle.

The two ¾-inch nozzles are actually equal to one of 1.06 inches diameter, but this latter is not a standard size nozzle and therefore the nearest sized standard nozzle (1-inch diameter) must be used.

When Protecting Exposures Comes Last

To the Editor:

If you arrive simultaneously with the first due company to a fire in a large hotel in the congested district, with the fire having gained considerable headway, which of the following would be the last operation started: 1. Sizing up; 2. calling for additional help; 3. life saving; 4. protecting exposures; 5. ventilation?

C. T. R.

Answer: Bearing in mind that life saving comes first at any fire, the last of the five operations listed which would be carried out would be, in our estimation, protecting exposures.

There might be some instances where ventilation could not be performed effectively due to the height of the building, or inaccessibility of the upper floors, but normally ventilation is a step in the saving of life. As you are well aware, all activities devoted to saving of life must come first at any fire.

"Short Answer" Questions

To the Editor:

I would appreciate your giving the correct answer to the following true and false and completion questions:

1. Standpipe intake connections are equipped with butterfly valves.
2. The device placed on the spar of a pompier ladder to keep ladder away from a building is called .....
3. The best place to start inspecting a building is on the .....
4. The passing of heat from one body to another is called .....
5. Beams, whether steel or iron, or cast iron, may bend either ..... or .....when exposed to fire and water.
6. Occasionally cast iron, when heated and chilled, not only warps but .....from sudden chilling.
7. When checking exposures both ..... and ..... exposures must be considered.
8. Static pressure is pressure created .....

P. D. E.

Answer 1. This statement is "False." The standpipe intake connections should be equipped with approved, straightway check valves.

Answer 2. The device placed on the spar of a pompier ladder to keep ladder

FIRE√CHEX
PRODUCTS

A. B. SEIGFREID, President
J. B. SLAUGHTER, Exec. Vice-Pres.
D. D. SEIGFREID, Vice-Pres., Sales
H. R. FRANCK, Secy-Treas.

NEARLY 60 YEARS EXPERIENCE IN THE FIRE EQUIPMENT FIELD

FIRE TRUCKS on any commercial chassis

Our very own custom "MASTER-BILT" Fire Truck powered by nationally known engines up to 295 brake horse power motors.

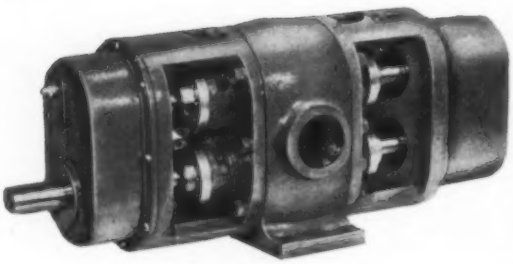
APPROVED
FIRE EXTINGUISHERS
FIRE HOSE
SAFETY and ALLIED PRODUCTS

CONTACT
FIRE MASTER CORP.
Manufacturers
MT. CLEMENS, MICH., U.S.A.

LEONARD ROTARY GEAR PUMP

Visit with us at booth #52 IAFC Convention

A New and Better Fire Pump



HERE is a rotary gear fire pump that will utilize all the power that can be safely supplied by power take-off. Shafts are mounted on Timken bearings eliminating wear, loss of suction and loss of pressure. Delivers 150 gals. per minute at 150 lbs. pressure. Everything about the LEONARD PUMP is designed and made to stand up in hard fire service. It's "the pump you can't wear out!"

DEALER TERRITORIES AVAILABLE

WRITE FOR LITERATURE

Manufactured by
POTTER-HORN INC.
OSTERVILLE, MASS.

National Distributor
AMERICAN FIRE EQUIPMENT CO.
717 BOYLSTON ST., BOSTON 16, MASS.

MODEL 20 SIRENLITE for Emergency Vehicles

Siren sounds a penetrating warning, red light automatically flashes authority. Traffic opens instantly, day or night. FREE ROLLING feature.

STERLING SIRENS

- **HANDSOME**
- **RUGGED**
- **RELIABLE**

Built by proud craftsmen to the highest standards of precision manufacturing . . . utilizing materials of finest quality . . . Sterling Sirens give year-after-year of unsurpassed dependability and satisfaction.

MODEL M GENERAL FIRE ALARM SIREN for Volunteer Systems

Quick acceleration, power-plus . . . Model M really gets the boys out in a hurry! Used by championship companies from coast to coast. A dependable, heavy-duty siren built of the finest materials throughout.

Complete line of Siren Equipment • *Bulletin on Request*

THE STERLING SIREN FIRE ALARM CO., INC.
58 ALLEN ST., ROCHESTER 6, N.Y.

away from a building is called "shield," "bracing shoe" or "brace."

The first definition is one widely used in western fire departments while the second and third are from literature issued by the International Association of Fire Chiefs.

Answer 3. The best place to start inspecting a building is on the roof.

Answer 4. The passing of heat from one body to another is called conduction (if bodies are in contact); otherwise, convection or radiation.

Answer 5. Beams, whether steel or iron, or cast iron, may bend either up or down when exposed to fire and water. (This question is somewhat vague. As a matter of fact, metal beams may bend in any direction when exposed to fire and water.)

Answer 6. Occasionally cast iron, when heated and chilled, not only warps but ruptures from the sudden chilling.

Answer 7. When checking exposures, both exterior and interior exposures must be considered.

Answer 8. Static pressure is pressure created by the weight of a fluid at rest.

Capacity of a Pumper

To the Editor:

On Page 202, of "Fire Service Hydraulics," Problem 195: "A motor pumping engine is rated at 800 gpm at 120 pounds. How many effective ⅞-inch streams can it supply if each is 1,000 feet in length?"

In working this problem, you assumed 40 pounds nozzle pressure.

Without assuming anything, would the following method be incorrect?

N. P. = E. P. ÷ (1 + KL)

K, for ⅞-inch nozzle on 2½-inch hose, is .068.

L, the number of 50-foot lengths of hose in the line, is 20.

Therefore N. P.

= 120 ÷ (1 + .068 x 20)
= 120 ÷ 2.36
= 50 pounds approximately.

The discharge from a ⅞-inch nozzle at 50 pounds nozzle pressure is 158 gpm.

800 ÷ 158 = 5 lines.

The answer in the book is 7 lines.

J. F.

Answer: The question is asked "How many effective ⅞-inch streams can a pumping engine supply if each line is 1,000 feet in length?"

Smaller nozzles are considered as giving effective presure when the nozzle pressure is 40 pounds, whereas larger nozzles require from 60 to 90 pounds. We will therefore get a greater number of effective streams at 40 pounds nozzle pressure than we will at 50 pounds nozzle pressure, where the flow will be greater and there will be a greater demand on the pumper for each line in operation.

For that reason, 40 pounds is assumed as the nozzle pressure on each of the lines.

Your solution is entirely correct. if you want to stick to 50 pounds nozzle pressure.

Another point which is overlooked

is that at 40 pounds nozzle pressure less than 120 pounds is needed at the engine. If you reduce the engine pressure below 120 pounds, you will get an increase in discharge, within certain limitations. Thus you actually increase the number of effective streams materially by using the smaller nozzle pressure, as you may note by making a comparison of the two answers.

Obituaries

Chief Kuhl Dies of Heart Ailment

Chief Charles B. Kuhl, 42-year veteran of the Sioux City, Iowa, Fire Department, and for the last 11 years its chief, died July 15th of a heart ailment.

Chief Kuhl was born in 1888, entered the department in 1910, was promoted to captain in 1917 and assistant chief two years later. In 1940 he was made chief of department.

During his tenure, the fire department made great strides, practically all old apparatus being replaced, a fire prevention bureau was established, a training manual adopted and fire department procedures standardized.

Chief Kuhl was long a member of the Missouri Valley Division of the International Association of Fire Chiefs and he was always welcomed at International conventions by his host of friends who invariably besought him to sing the Iowa song, "Sioux City Sou." He was a member of Tyrion Lodge 508 A. F. & M. Consistory, the White Horse Patrol and Abu-Bakr Shrine Temple.

Funeral services were attended by the entire off-shift of the Sioux City Fire Department, local civic officials and a large group of out-of-town fire officers including Iowa Chiefs Charles L. Slade, Des Moines; Boyd A. Arnold, Mason City; Ray Tiller, Waterloo; Harold A. Stanton, Storm Lake; Waldo Merrill, and Asst. Chief McCord Park, and Capts. McTurigan and J. Burke, all of Council Bluffs. Also, Ellis C. Iverson, State Fire Marshal, Lincoln, Neb.; Chief Z. E. Miller, Fremont, Neb.; Chief Clyde Dunn and Capts. Goodwin, Gidding and Robinson, all of Omaha, Neb.; and representatives of the fire apparatus manufacturers.

Rochester Loses Two Retired Chiefs

Retired Rochester, N. Y., Fire Chief George N. Fletcher, 80, died July 1, 1952. He joined the Bureau of Fire in 1896 and served 45 years, 36 of which as an officer.

Chief Fletcher was made a lieutenant in 1905, captain in 1908, a battalion chief in 1922 and deputy chief in 1934. He was advanced to chief in 1937 after the death of Chief Maurice Keating. He retired in 1941 and was succeeded by the present chief, John A. Slattery.

Frank V. Gallaher, 72, Battalion Chief in charge of the Rochester Fire Bureau's Fire Prevention Bureau, succumbed unexpectedly July 3rd, of a heart attack. He had retired from the Fire Bureau in 1945.

Chief Gallaher was appointed fireman in 1909, made lieutenant in 1916, captain in 1924, and battalion chief five years later. He was named head of the F. P. Bureau on its formation in 1929.

You Can Be Sure of Positive Protection With NIEDNER FIRE HOSE

When a fire starts, there is no time for "fooling around", especially with a fire hose. With Niedner hose you have sure protection . . . it is ready when a fire emergency comes . . . to safeguard life and property in public buildings, factories, hospitals, hotels, aboard ship, in forests, woodlands, or homes.

RENDEIN yellow label indoor fire hose. Look for distinctive black, red and yellow stripe.

RENDEIN Indoor Fire Hose

For greatest protection and durability this hose is made of high grade pure linen. It meets all standards of Underwriters' Laboratories for unlined fire hose for indoor protection. (Unlined fire hose has far greater durability under average indoor conditions than any other type of fire hose.) RENDEIN Hose is rigorously inspected by Underwriters' Laboratories' inspectors before shipment. By a special Niednerizing process, RENDEIN Hose can be made mildew-proof. Hose is available in 1¼, 1½, 2, 2½ inch sizes; 50, 75, 100, 300 foot lengths. Brass couplings in all standard specified threads and sizes are also available.

RED CHAIN forestry hose for forests, homes and woodlands. Identified by distinctive red chain stripe.

RED CHAIN Forestry Hose

RED CHAIN pure linen forestry hose meets severe forest service requirements by combining the features of strength (withstands pressures up to 1000 pounds), light weight, flexibility, and compactness. By the exclusive Niednerizing process, RED CHAIN Hose is mildewproofed for long, efficient life. To protect itself against fire, it is skillfully woven to sweat just enough without reducing nozzle pressure. Sizes: 1, 1½ inch. Lengths: 50, 100 feet. RED CHAIN can be coupled with your choice of aluminum or brass forestry couplings.

For sure, positive protection, use NIEDNER fire hose. Write for name of nearest dealer.

NIEDNER'S PURE LINEN FIRE HOSE FOR OVER 50 YEARS

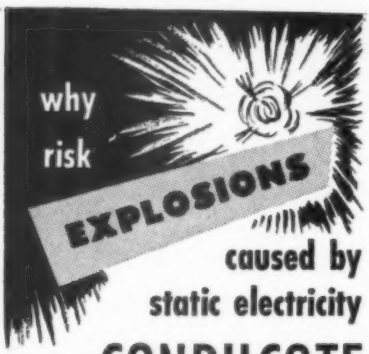
Chas. NIEDNER'S Sons Company
10-20 James St., Malden 48, Mass.

Stocked for immediate delivery by . . .
WESTERN FIRE EQUIPMENT CO. 69 Main St., San Francisco 5, Calif.
RALSTON R. CUNNINGHAM CO., INC. 71 Columbia St., Seattle 4, Wash.

Mr. FIRE CHIEF

Consult your Fire Equipment Dealer when you buy your lights and other equipment. Profit by the knowledge and experience he can place at your disposal. He will gladly show you ARGUSLITES for better lighting.

ARGUSLITE CO.
BLUE RIDGE SUMMIT, PENNA.



when CONDUCOTE

COSTS SO LITTLE?

Prevent death and destruction—grim partners of static-produced explosions—by coating your floors with spark-proof CONDUCOTE.

Costs only pennies per square foot, yet it may save you a King's ransom in property damage and liability suits. Provides a natural outlet for stored-up static charges by creating conductive surfaces on your floors.

Easy to apply. Leaves a smooth, attractive surface that is no problem to maintain. CONDUCOTE Finish is available in your choice of 5 colors.

Certified by Underwriters' and Electrical Testing Laboratories.

NEW

CONDUCTIVE BOOTIE

Safely Disperses Static Stored in Human Body

Worn over ordinary shoes, the LEGGE CONDUCTIVE BOOTIE drains dangerous body currents from skin to floor.

Easy to wear, easy to store. Occupies little space in scrub-up rooms. Sterilized after each wearing, so it need not be individually assigned. Costs little more than half as much as conductive shoes.

YOU'RE SAFE WHEN YOU HAVE LEGGE TO STAND ON

LEGGE SYSTEM of Safety Floor Maintenance

Clip coupon today for full information. WALTER G. LEGGE CO., Inc., 101 Park Ave., New York 17, N. Y. In Toronto—J. W. Turner Co. Branch offices in principal cities.

FE-8

Walter G. Legge Company, Inc.
101 Park Ave., New York 17, N. Y.

Gentlemen:

Please send me detailed information on Conducote and Conductive Bootie.

Name_____

Hospital_____

Street_____

City_____ Zone____ State_____

FOG NOZZLES, TWO-WAY RADIO, PRIDE OF COPENHAGEN FIREMEN

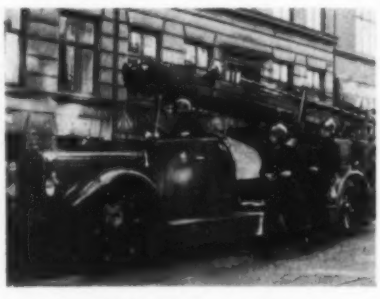
Department Well Equipped and Trained; Protective Breathing Apparatus Widely Used

By Paul C. Ditzel

This is another in a series of articles on European fire departments and alarm systems prepared especially for FIRE ENGINEERING by Paul C. Ditzel. The author expresses his indebtedness to Mr. Jorgen Bolt-Jorgensen of the Copenhagen Fire Brigade for his assistance in preparing this article.—EDITOR.

FOG nozzles and two-way radios are the prides of the Copenhagen Fire Brigade, one of the most modern fire organizations visited by this FIRE ENGINEERING correspondent.

Like most other European fire departments, the city operates under a system of consolidated fire stations. European departments do not have the traffic problems found in motorized United States cities and therefore have found consolidated fire stations a more economical arrangement.



An older ladder of the Copenhagen Fire Department. These three pictures show a normal box alarm assignment to an alarm in Copenhagen. Notice the hard rubber tires on this rig. Both box alarms and telephone alarms receive identical assignments here.

The fire service of this city is under control of the Municipality of Copenhagen and Ministry of Justice. Chief Officer is P. Vinding, whose headquarters are at 23 Vestre Boulevard. He is assisted by two deputy chief officers and 13 fire protection officers who have civil engineer ratings.

The department has 692 men, including the operational, administrative and workshop employees. According to Geoffrey F. D. Pratt's "Fire Protection and Accident Prevention Year Book, 1951," the estimated cost of operation of the brigade is 19,379 kroner.

Serving a population of 757,100 people in an area of 29 square miles, the Copenhagen brigade has eight stations. Equipment consists of 20 pumpers, four pump escapes (combustion pumpers and ladder companies), five turntable ladders (hook and ladders), five tenders, 40 trailer pumps, 17 ambulances, and one canteen.

Other equipment of the Copenhagen fire department includes 202,000 feet of hose, 702 breathing apparatus sets, nine oxy-acetylene sets, two lighting sets, and 20 foam generators.

During the latest full year, for which the brigade has figures, it responded to 2,558 fires and 22,804 ambulance calls. Note the high proportion of rescue calls to fire duty.

One official of the Copenhagen fire department estimated that 90 per cent of the city's fires were extinguished by fog nozzles with their straight stream adapters. The fog nozzles, similar to those in use in the United States, are of Danish manufacture.

Contrary to standard United States metropolitan city fire alarm procedures, a signal sent from any one of Copenhagen's 226 fire alarm boxes goes to the nearest fire station. Telephone calls for fire assistance are received at the headquarters station fire alarm office.

On a box alarm or telephone call, all companies from the nearest station respond, plus a turntable ladder from the next nearest station. A normal box alarm assignment consists of one pumper, one pump escape, a turntable ladder, an inspector, and a chief officer.

Signals are sent from the fire alarm boxes by breaking the glass with the elbow. The smash of the glass and subsequent pushing in of the elbow or the finger, sends in the alarm. There also is a telephone in the box. Fireboxes, which are located every 250 meters, have written instructions telling the person sending in the alarm to remain at the box until fire apparatus arrives.

When a signal is received at the nearest station it is simultaneously sent out automatically to the other seven fire stations. In this manner the entire department knows when a district is left without its normal complement of fire apparatus. Seldom is there any move-up of apparatus to occupy stations surrounding the fire, even in the case of multiple alarms.

The Copenhagen fire department's FM radio is used at all turnouts. If the fire alarm office receives more in-

Modern aerial ladder of the Copenhagen Fire Department. This ladder caroms off the rear of the truck and can then be wheeled to the site of the fire.

formation on the fire while apparatus is en route to the alarm, the office notifies the chief in charge via the two-way.

The Copenhagen fire radio has two frequencies: one from the firm alarm office to the fire chief and the other frequency carries messages back to the fire alarm office. The fire department has two fixed stations and 13 pieces of apparatus equipped with radio.

When the officer arrives at the fire he radioes headquarters what is burning and how many hose lines are going to be used.

Pumper of the Copenhagen Fire Department on the fire scene during a blaze in a five-story tenement building. Notice the hose reel on this almost completely enclosed fire engine.

If the fire will require considerable time to extinguish and to overhaul, the inspector advises the fire alarm office via radio. An off-duty chief is then called and reports to headquarters to fill-in for the off-duty chief until he returns in service.

If more assistance is required at a fire, the officer does not radio a second or third alarm according to the United States tradition. Instead he says, "I want another station." The next nearest station to the fire then is alerted and respond to the fire.

The Copenhagen fire department values its two-way radio also for the speed with which it can call for additional assistance. While coming down the street on which there is a fire, Copenhagen officers have been known to pick up the transmitter located in the back seat of the car in which they ride and call for help.

The Copenhagen fire radio was put into operation in 1931. Their transmitter is on top of a water tower in a high part of Copenhagen. The other transmitter is a standby station.

The city hopes to extend use of radio and install a two-way set on one pumper at each station. At present, four ambulances, two officers cars, and two cars carrying "smoke divers" are among the pieces equipped with two-ways. These latter cars respond to all fires and carry seven men who don oxygen masks en route to the fire. Their function is to rescue occupants of burning buildings and then take hose lines into the place.

One of the Copenhagen fire department's paramount problems is the large number of five and six story buildings, particularly slum areas, which have only one fire escape. While building codes now forbid construction of such buildings, the old buildings remain. And it is physically impossible to make necessary changes without tearing down the entire building. With housing and building still

BLITZ BUGGY *FIRE FIGHTERS*

MODEL C-134-A

200-GALLON TANK—500 FT. 1½"
PLUS 800 FT. 2½" HOSE
LARGER WATER OR HOSE CAPACITIES OPTIONAL

300 GPM TWO-STAGE HIGH PRESSURE PUMP
CURRENTLY SELLING $3950 to $4950 PLUS YOUR CHASSIS

MODEL FCM3

200-GALLON TANK

300 GPM TWO-STAGE
HIGH PRESSURE PUMP
PRESSURES UP TO 700 LBS.

MOUNTED ON ANY CHASSIS INCLUDING DODGE POWER WAGON, CHEVROLET, FORD, ETC.

WRITE FOR BOOKLET

HI-PRESSURE FOG EQUIPMENT CO.
OLD FORGE, NEW YORK

Listen to the Men Who Use it!

From Coast to Coast . . .
Progressive Fire and Police Chiefs . . .
To Protect Their Men and to
Save Life, Time and Property.

give them the

HALLIGAN TOOL

10 TOOLS IN ONE — DOES EVERYTHING — EVERYWHERE

ONE MAN—*alone*—
for forcible entry.
Ventilation, brick walls, roofs, floors, trim, ceilings. All inside or outside work.

Awarded
CERTIFICATE of MERIT
Boston Fire Fighters Local 718, IAFF, Awarded to Chief Hugh A. Halligan, Fire Dept., City of N. Y.

Grand Rapids, Mich.: "Very much pleased and satisfied with tools."

Union City, N. J.: "The best all-around tool in the fire-service. I readily recommend them to any Fire Dept. or emergency requirements."

M. A. HALLIGAN, 1505 Metropolitan Ave., N. Y. 62, N. Y.

CIRCLE-D AIDS RESCUE SQUAD

Circle D-150 Emergency Portable

The CIRCLE D-150 Emergency Portable Floodlight assists firemen search through New York apartment blast rubble.

The CIRCLE D-150 is light in weight (6 lbs.), compact in size, dependable in all weather and easy to handle. It is designed for tough assignments, has large tip-proof base, spring mounted mogul socket and silicon rubber gasket to protect against sudden shocks. A twist lock connector prevents cord from being disconnected and a spring clutch elevation knob insures steady beam in any elevation. Special quick release clamps for securing light to emergency and rescue trucks are available.

Write for catalog

NATALE MACHINE & TOOL CO.
339 State Highway No. 17 Carlstadt, N. J.

HERE IT IS!

finest Booster Hose Reel made

Designed by fire apparatus builders, for beauty and ease of operation, as well as for the highest pressures now being used by fire departments.

•

Bevel Gear Drive is optional.

•

Write for full details.

THE *"Rocket"* HOSE REEL

RUGGED • SMOOTH-RUNNING • DEPENDABLE

Minnesota Fire Equipment Co.

North Branch, Minnesota

scarce, just as in the United States, this problem is a serious one to the Copenhagen fire officers.

There are five fireboats operating in the expansive harbor of Copenhagen. The boats are manned and operated by the Copenhagen police department. In most cases these boats are used to take lines off to land companies and are not equipped with turret guns.

A final interesting aspect of the Copenhagen fire department is a book of plans, alphabetically arranged in a spiral-wire bound book, showing special fire hazards and locations of equipment responding to fires and the locations these companies will take.

These simple diagrams also show hydrants. Symbols designate whether the apparatus at that location is a pumper, pump escape, or turntable ladder. The name of the station to which the apparatus is assigned also is shown.

With Our Readers

(*Continued from page* 658)

banquet). Actually I can name three or four companies that average only one call a year within their own territories.

The situation aggravates the following problems: 1. Obtaining adequate manpower; 2. Securing funds from purely solicitation; 3. Obtaining apparatus from material-scarce manufacturers and, 4. Rivalry between companies seen in improper conduct at fires and in the purchasing of all-designed apparatus for the particular company (e.g. not far from this town there is a company with a 900 G.P.M pumper and practically no booster tank supply. It is a town of about 1,000 and is largely a rural outfit needing to haul its water. It would have been better to have had a small pump and more water but the nearest town had just purchased a 750 G.P.M. pumper and they had to have one better).

Please do not think me presumptious in writing so long a letter but I feel this situation deserves looking into and I shall be grateful for your time in carrying these enclosed ideas further.

REV. WILSON DAVIS
Ridgely, Md.

Editor's Comment:

It is no secret that the problem of financing volunteer fire companies has grown more complicated with the increasing restrictions placed upon the money-raisers. It is common knowledge likewise, that in some areas, principally suburban communities, there is apparent duplication of fire forces, too great response of companies in some places, too little in others. And it is a fact that in such areas there is an "unbalanced" manpower problem; too few men at certain times, too many, perhaps, at others.

Setting up an "adviser group" to determine if a given company is really necessary looks nice in theory, but if we know our volunteers, it would have short shift in practice. Few volunteer fire companies were originally established on a basis of efficient location. Fewer still have ever voluntarily shifted location to be of more efficient service to community. And even if a "board" ruled for the shift, that would take some doing!

Underwriters rating bureaus can tell you that in communities of any size having volunteer departments, asking a fire company with years of tradition behind it to up stakes and shift its site

would be like asking a drowning man to turn over and dive.

Perhaps Fate is going to find the ultimate answer to the problem; perhaps the lack of funds, the growing restrictions, and increasing difficulty in maintaining interest when there is so little chance to smell smoke, may bring about the adjustment our good correspondent has in mind.

Overlapping functions, duplication of effort may be flaws in the volunteer system, but with all that, the system itself seems to be improving. And as to apparatus, undoubtedly there is too much "keeping up with the Joneses" in the volunteer field ("We gotta have the biggest and best"—even if it proves a white elephant); undoubtedly there are volunteer outfits using the wrong kind of equipment, but this condition doesn't always persist. That's the very reason many of them want money—to repair the errors of earlier judgment, to replace the sub-standard, ill-chosen equipment.

The Round Table

(*Continued from page 672*)

outboard motor boats, one inboard motor boat and one 12 x 10-foot barge that is used in dragging operations. This barge is equipped with an outboard motor. Ten or twelve men can work from this barge in the lake with the greatest of ease. We find this work pays off in public relations not only in our town but in surrounding towns, as our boats have been used in lakes and rivers ninety miles from Bristol.

William S. McFadden, Chief, Wheeling, W. Va.: The Fire Department of the City of Wheeling owns and operates one water driven power boat, equipped with a 600 gallon per minute centrifugal pump, and eight flat bottom wood skiffs for river and flood emergencies.

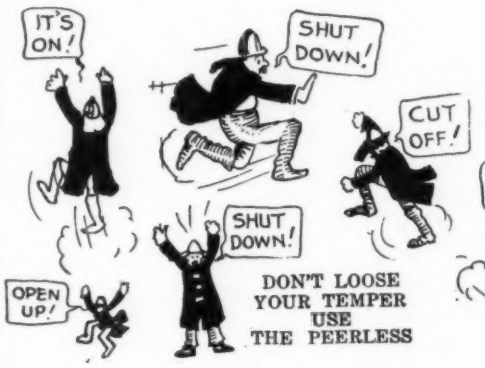
Water is used for propulsion for the fire boat, and is delivered from a centrifugal pump. This boat is also equipped with one deck gun, various size nozzles, and two 2½ gated discharge outlets. The boat is land-based on a trailer, and can be taken to the nearest available place to put the boat in water in case of a river fire or flood emergency. The combined weight of the trailer and boat is approximately 11,000 pounds.

We have used the fire boat several times to good advantage on the river, but due to its bulk and slowness, it is impractical for river use where there is a swift current, such as would be in case we had flood stage.

For flood purposes, the eight skiffs are used, four of which are put on trailers and equipped with portable fire fighting equipment, such as handy billy pump, fire extinguishers, four sections of 1½" hose, axe, rope, pike pole, suction hose and life jackets; these four trailer-borne skiffs are assigned to engine companies in or near the area of the high water district, and the system is flexible enough so that one or all can be concentrated to a fire area. We have used this type of system in flood emergencies on several ocassions when we had fires in high water district, and were able to concentrate this type of equipment to the fire area with good advantage.

The other four skiffs are used and manned by the fire department for

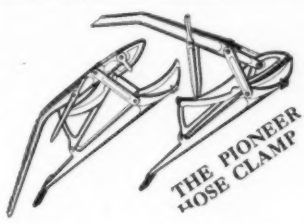
One of the Old Chiefs Said THE PEERLESS HOSE CLAMP ELIMINATED THE *COMEDY OF ERRORS* IN 1910 AND *MADE CHASING OBSOLETE.*



DON'T LOOSE YOUR TEMPER USE THE PEERLESS

NO CHASING, NO TRACING, SAVES TIME, ALL ERRORS ELIMINATED, IMPROVES EFFICIENCY, GIVES EXTRA MAN AT BEGINNING —HOW? A POST CARD WILL BRING THE ANSWER—*METHODS MADE POSSIBLE WITH THE PEERLESS.*

U.S.A. AND CANADIAN PATENTS

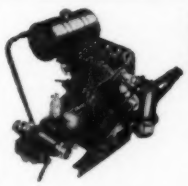


TELL A LIE, IT MUST BE REPEATED—TELL A TRUTH, IT SPEAKS FOR ITSELF.
The truth has sold the PEERLESS all over this Country and in Foreign lands. The Peerless speaks for itself and remains what its name signifies.

Always SPECIFY "PEERLESS" by name. On all new apparatus builders will gladly install it for you.

Manufactured ONLY by—

KELLAM MANUFACTURING CO., P. O. BOX 729, ATLANTA, GA.



Write for Bulletin 6600-F

WEIGHS ONLY 110 LBS.

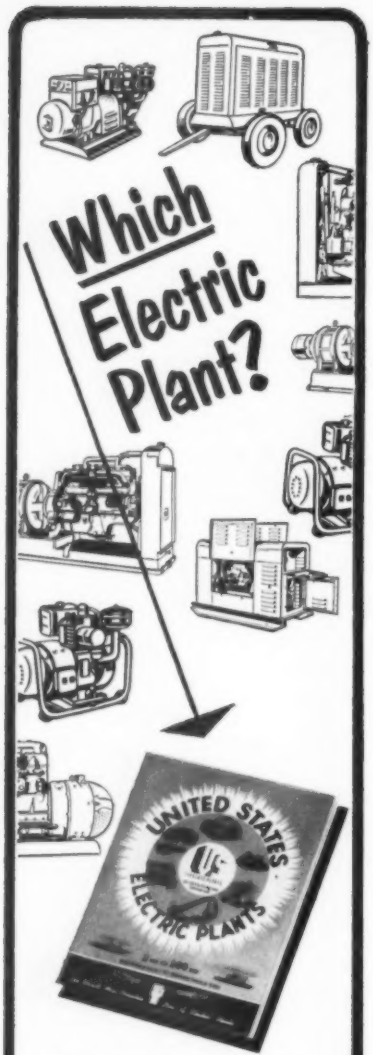
MORE EFFECTIVE FIRE PROTECTION

CITY • RURAL • FOREST

MODEL 6600 PUMPER—Instantly Self-Priming—No waiting when seconds count
HIGH PRESSURE—Use one or two hard-hitting streams or fire-blanketing fog-spray
LIGHT WEIGHT—Easily carried to source of water or fire area
NEOPRENE IMPELLERS—Pump dirty water as well as clean water—assure long life
POWER—Efficient 4-cycle, air-cooled 5 HP engine known and serviced world-wide
BY-PASS VALVE, SPRING LOADED GREASE CUP, NO LOSS OF PRIME, PLUS MANY OTHER FEATURES

UP TO 40 GPM AT 150 PSI

MARINE PRODUCTS COMPANY
515 LYCASTE AVENUE • DETROIT 14, MICHIGAN



This booklet helps you choose the right unit for your needs . . .

This free booklet will help you select the right type, the right size, starting method, etc. for your particular application. *Whatever* you need, you'll find it in the "U.S." line — for U.S. builds over 300 models, backed by more than 60 years of manufacturing experience.

UNITED STATES MOTORS CORPORATION — US — OSHKOSH, WISCONSIN

UNITED STATES MOTORS CORP.
430 Nebraska St. Oshkosh, Wis.
Please send me the free booklet on Electric Plants. I am interested in
☐ Gas powered, ☐ Diesel,
☐ Gasoline powered

Name .....
Address .....
City ..... Zone .... State ....

patrol purposes and rescue operation. These are equipped with first aid, fire extinguishers, and radio.

In addition, one steel skiff is mounted on a trailer at all times, and is maintained for daily river emergencies, such as drownings, etc.

In all instances personnel is trained in the use and operation of all units, so that they can be used to the best advantage in case of an emergency.

S. D. O'Conor, Chief, Beaumont, Tex.: We do have a small 16-foot boat powered by outboard motor which is used for searching for drowned persons. This was first purchased for the rescue of persons who were marooned by high water in the Neches River, but hasn't been used for that purpose in several years since the river has been straightened out and does not flood the low lands as it formerly did.

I believe all fire departments should have some means of water transportation, at least those cities which have have lakes or rivers in their vicinity. We need a fire boat here as we have a lot of river front and several thousand feet of waterfront property to protect. It is a problem when you have a dock and warehouse fire and can only get to it from the land side.

C. M. Kenner, Chief, Kingsport, Tenn.: We have two boats, one in each fire station. These are mounted on special trailers. We have one 5 hp and one 14 hp motor for each boat. By having extra motors we can borrow more boats for extensive dragging operations for recovering bodies.

Boats are used in drownings and other emergencies. We sometimes patrol or stand by at Boy Scout functions or special outings on or near water.

We are located near two rivers and within forty miles of five TVA lakes, in which we help in an average of eight drownings per year.

We have had a volunteer life saving crew working out of the fire department since August, 1948, which helps in all types of emergency work. On drownings outside the city we call in crews of these volunteers to do the work so as not to weaken the fire department by sending regular firemen.

The Kingsport Life Saving and First Aid Crew, Inc., now own and operate about $13,000 worth of equipment and operate on a $5,000 yearly budget furnished by the Community Chest. Frankly I don't know how we managed to get by without it.

I believe every fire department that is located near rivers or any other body of water, should have and maintain boats for at least the recovery of drowned persons. We find that it is very good public relations. I believe every fire department should do everything in its power to serve the public, and this will automatically make for better relations.

William H. Mattocks, Chief, Saint Paul, Minn.: While we do not maintain a power boat in our department, we were fortunate in having the use of two Government "Ducks" during the flood which lasted from April 8th through May 1st. These vehicles were equipped with portable pumps of 500 gallons and 250 gallons capacity. We kept them in service about four weeks and used them at several fires in the flooded area where apparatus couldn't get in. In addition, they toured the flooded districts and the airport.

Duck at wharf.

The pictures herewith show the duck at the wharf and at a fire in a dwelling in the flooded area. The fire was in the walls of this house, burning off telephone wires. The woman in the house had to row a quarter mile to telephone the fire department, as the water at this particular spot was around five feet deep. This duck had a 500-gallon centrifugal pump and carried 500 feet of 2½-inch and 200 feet of 1½-inch hose, portable extinguishers, two 24-foot extension ladders and one 14-foot and one 12-foot roof ladder. It was manned by six men. Our apparatus could not have reached this fire as the water in the area was too deep.

Alex Andreski, Chief, Janesville, Wis.: We maintain a boat equipped with a 5 hp Johnson Sea Horse motor. We have a metal boat with air tanks.

Duck at fire in flooded area in St. Paul

mounted on trailer. In boat we keep life jackets, hooks and oars. We have trailer hitches on all trucks so any truck can take the boat to the scene of drowning.

The Rock River flows through the heart of the city. In the spring it is high and fast so the motor has proven very satisfactory in bucking the current in the river.

We have had an outboard motor for the past twelve years and would be lost without it. When you have any distance to go on a river or lake it is a time-saver. At times it means the difference of saving or losing a life. We tried using a wooden boat instead of the metal one, but found it too heavy. In addition we would get holes in it bucking thin ice when our streams start freezing in the fall.

Roy H. Green, Chief, Traverse City, Mich.: We do not maintain a power boat in our department. One is maintained by the County Sheriff's Department, who is also the fire chief of the county. The men in our department are instructed in the use of this boat. The boat is on a trailer and can be attached to any car or truck bumper. It is kept at the county jail just three blocks from our fire station. The radio systems of the Sheriff's Office, the State Police, the city police and the fire department are all hooked up together so that we can receive any call at any time.

The boat is used for any kind of emergency that may come in, mostly drownings, however.

This boat is very useful on a lot of our inland lakes and also on Grand Traverse Bay, which is a very large body of water.

We would like to have a boat of our own, but our fire station was constructed in the year 1886 and we do not have the room.

J. L. Croom, Chief, Wilmington, N. C.: We have a regular fire boat with 3,000-gallon capacity pumps. A crew of four men are aboard her at all times and she has been very useful in fire fighting along the Cape Fear River waterfront.

We also have a 14-foot utility boat with a 9 horsepower outboard motor for rescue work. This boat is stationed on beautiful Greenfield Lake, just behind Fire Station No. 6. It can be placed on a trailer for fast transportation to any spot where needed.

R. T. Messerly, Chief, Zanesville, Ohio: At the present time we have no boat, but we are planning to purchase one. We are located at the junction of two rivers and a boat with an outboard motor would be a valuable piece of equipment for recovery of a body in the event of a drowning and also for rescue work in time of high water at flood stage. As you know, fire departments are called and respond to this type of work.

E. V. Austermiller, Chief, Napoleon, Ohio: We maintain a boat for emergencies. Due to local conditions we cannot use power. Shallow entrances, stone bottoms and rapids make power unsuitable.

The boat is used for water safety work and rescue work in drownings.

In our location it is a very important piece of equipment. We also operate this boat over a wide area as it is a very completely equipped unit. It is a metal boat with two air cham-

1952
ELECTRICAL DEMANDS
CALL FOR
Leece-Neville ALTERNATORS

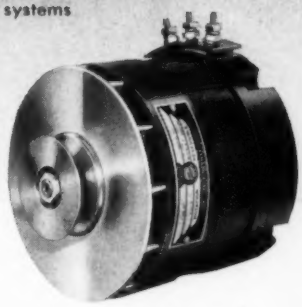
Today's accessory load takes more current from the battery than conventional d.c. generators can put back in. Batteries fail . . . vehicles break down . . . costs mount.

For 1952 performance, replace out-dated d.c. generators with the Leece-Neville AC-DC Alternator System, that gives you

25 TO 35 AMPS WITH ENGINE IDLING

There are Alternators for 6 and 12 volt systems with capacities from 50 to 150 amps.

Write the Leece-Neville Company, Cleveland 14, Ohio. Distributors in principal cities Service Stations everywhere.



YOU CAN RELY ON Leece-Neville

ALTERNATOR SYSTEMS • GENERATORS
STARTING MOTORS • REGULATORS • SWITCHES
FRACTIONAL HP MOTORS

TRUCK BUS DIESEL OFF-HIGHWAY
PASSENGER RAILROAD MARINE INDUSTRIAL

HALE TYPE FZZ

Ready-to-Use Portable for fighting fires 3 ways—solid stream, fog or foam. Available in carrying frame; mounted on wheels; or on rubber-cushioned steel channels.

Hale Type FZZ Portable Pumping Unit pictured above is pumping fog and solid stream through 1½" lines. View at right shows unit pumping foam. Foam proportioner is available at slight extra cost.

The FZZ will supply from draft, 60 GPM at 90 lbs. pump pressure; and 150 GPM at 30 lbs. It can supply two capable fire streams through 1½" lines, using ½" tips.

Write for new FZZ folder to:

HALE FIRE PUMP COMPANY
Conshohocken, Pa.

Fire Pumps in All Standard Capacities

Janesville TURN OUT SUITS FOR SMOKE EATERS WHO KNOW

Because our entire effort has been devoted to painstakingly determine the need of firemen everywhere; and then faithfully design and manufacture to THE FIREMAN'S NEED!

FIREMEN PREFER *JANESVILLE* TURN-OUT SUITS

For their rugged material; waterproof worth; their riveted, double stitched toughness. Firemen choose Janesville for the quick dependability of Janesville designed snaps and dee rings; detachable wool and flannel linings; for freedom of action and the unexpected comfort in such built-in toughness.

TURN-OUT SUITS COME IN THE FINEST ARMY DUCK AND IN PURE GUM RUBBER

SAFETY! Fire coats are available trimmed in the SAFETY FIND OF THE CENTURY — SCOTCH-LITE! When any light strikes its surface, Scotch-lite "lights up like a lamp." This is a terrific safety factor on dark streets or in dark, smoke filled buildings.

WE INVITE YOUR INQUIRIES.

Janesville APPAREL CO.
JANESVILLE, WISCONSIN

Better Hose Care--- with CIRCUL-AIR

UL SA

PATENTED

THE AIR CONDITIONING
FIRE HOSE DRYER

Circul-Air is the patented, electrically operated hose dryer which circulates prewarmed fresh air through coiled wet hose at the rate of 5 to 6 air changes per minute. It's designed to lengthen hose life, improve the appearance and functional design of new fire houses, and to save floor space and hard work. NO OTHER DRYING METHOD IS SO FAST—SO ECONOMICAL—SO EASY TO USE.

ACCEPTED • APPROVED • RECOMMENDED

ACCEPTED as the standard drying medium in over 1500 fire departments — APPROVED by the leading testing laboratories — RECOMMENDED by fire hose manufacturers and Fire Chiefs "all over America."

If you are building, send for free copy of "Fire Station Design"

NEW HOSE DRYING MANUAL TELLS HOW TO DRY, STORE AND CONSERVE FIRE HOSE

May we send you one?

THE CIRCUL-AIR CORPORATION
575 East Milwaukee Detroit 2, Michigan

bers, the necessary drags, rope, blankets, life preservers, first aid kits, lights for night work, stretchers, rubber blankets, and sack. This unit is trailer mounted and hitches are provided on two of our rescue trucks to pull same. Our rescue unit is equipped with three inhalators, two-way radio and extra life jackets, rope, etc., to be used at the scene of any water tragedy.

We feel all fire departments, especially those with rescue units, should have boats. In case of floods and some types of disaster, fire boats play an all important part.

Albert W. Fisher, Chief, Johnstown, Pa.: Our department's equipment includes one power boat of the outboard motor type. This piece of equipment has proven itself ideal for the rare occasions we find use for it—drownings, dragging our rivers, etc.

Prior to the completion of a huge flood control project after our last disastrous flood in 1936, power boats played a more important role in the department's emergency work. The new river walls and the generally improved conditions of our rivers has resulted in erasing the old "Flood City" stigma and it is now being referred to as the "Flood-Free City."

Lorenzo J. Jones, Chief, Duluth, Minn.: We do not maintain a power boat in our department, although we have been able to rent or borrow both outboard and inboard motors when the occasion arose.

I do feel we should have one. In fact, we are planning to secure one for drownings up the river a bit from our main harbor.

I think they are very essential for fighting fires under docks and wharfs and for rescue work around the harbor.

We have forty to fifty small craft of all descriptions we could call on in an emergency, and then again we have the U. S. Coast Guard stationed here. One of these Coast Guard boats has two 500-gallon fire pumps we could press into service should the occasion arise and the boat be available.

I have been pressing the need of such a boat for some time and want the Coast Guard to have a large scow in readiness for the department so that we could place a large pumper on its deck in the event of a large waterfront fire. I figured the scow could be towed with the pumper to where we would want the pumper placed. In time, we hope to have this emergency fire protection.

Our harbor is frozen over for about three and a half months of the year. Nevertheless we are negotiating for a power boat and means of placing our pumpers on scows to be towed to waterfront fires.

Charles Bryan, Chief, East Liverpool, Ohio: We have an aluminum boat powered by an outboard motor. It is used for evacuating people from flooded areas, dragging the river for drowned people. We have also rescued a couple of men who broke away from police and tried to swim the river, and have also rescued two women who tried to commit suicide by jumping off the bridge into the river.

We have found our boat very useful and figure it as a very essential piece of equipment in the fire department.

John A. Laughlin, Chief, East Providence, R. I.: We have a 12-foot row boat in our department. In cases of prolonged use, and when it is possible

to use one, we do acquire an outboard motor to propel it.

The boat is used for emergencies at the waterfront, in most cases for drowning persons, but we have used it for fires around piling, patroling after a gasoline spill and cooperating with police in looking for weapons thought to have been thrown in the water. It has turned out to be a very useful piece of equipment on many occasions, and I am seriously considering expanding this particular service in the near future.

Sidney F. Lawson, Chief, Montpelier, Vt.: Several years ago the Fire and Police Departments jointly purchased an all-metal boat. It is not powered, but an outboard motor can be attached. We constructed a trailer by which means it can easily be transported.

We have had occasion to use it several times for drowning accidents, etc., and we consider it a very useful and necessary addition to our equipment.

A. McC. Marsh, Chief, Columbia, S. C.: We maintain an outboard motor boat for emergencies. It is used chiefly as a means to help recover the bodies of drowned persons. However, it would be employed in any manner feasible to its operation for rescue purposes.

We have found it to be most useful and to serve an excellent purpose.

* * *

The following replies are in answer to a previous Round Table on radio.

J. Coleman Miller, Chief, Auburn, Maine: We are equipped with two way radio. While the transmitter is allocated to the police department we have our own control box and speak from the equipped cars direct to our own dispatcher, and he, in turn, talks direct with us, although it is heard by by the police cars. Everything but three engine companies and the truck is equipped. We expect to equip these as soon as they become cab jobs.

Where we think it is feasible to stop the companies rolling into a box we do so, thus saving miles and extra chances of accidents.

We conduct inspections with companies from Central, and never put them out of service while inspecting. The ladder company is equipped with two walkie-talkies and they have proved to good advantage on sprinkler systems in the industrial zone. We find that if one equipped man takes a talkie direct to the sprinkler shut-off and the other man goes direct to the source of trouble, it makes for quicker water control and saves much water damage, especially if the fire is minor or the head has been set off because of other reasons. We hope to improve this particular service, by securing a stronger set in the near future and it looks now as though we will have our own transmitter before long.

J. N. Farmer, Chief, Petersburg, Va.: The Petersburg Fire Department serves a population of approximately 45,000 persons living within an area of 7.94 square miles, through four companies and a paid department of fifty men.

A thirty watt transmitter and two-way radios were first installed in January 1948. At present the entire department is equipped for two-way communication, and, an additional six-

KOHLER
ELECTRIC PLANTS
Independent Source of Electricity

Portable and Mobile

Portable model for floodlighting. Develops 1500 watts DC. Fits into small space; weighs only 75 lbs. Equipped with pilot light, 4 receptacles, double carrying handle. Rubber-tired hand truck available. Other sizes from 350 watts to 15 KW. Stand-by models, 750 watts to 15 KW, insure operation of siren, signals, when central station power is cut off. Write for folder 14-E.

Model 1.5M5, *1500 watts, 115 volt DC. Manual control. Length 18", width 14", height 21".*

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

NOTE: If You Are Already in the Fire Alarm Business, Learn About NOTIFIER

NOTIFIER Automatic FIRE ALARM

NOTIFIER
MANUFACTURING CO.
239 So. 11th DEPT. A Lincoln, Nebr.
Dealers and Offices in U. S. and Canada

AMERICA'S FASTEST GROWING MOST AGGRESSIVE FIRE ALARM & SIGNAL CO.

Investigate This Entirely New Field
EVERY BUSINESS - EVERY HOME A PROSPECT

FIRST IN THE HOME FIELD
with

1. Floor and area indication by circuits.
2. A.C. - D.C. Automatically controlled systems.
3. Supervision of D.C. power supply.
4. Alarm systems for every requirement.
5. Franchise backed by quality and integrity.

A LEADER IN THE COMMERCIAL FIELD

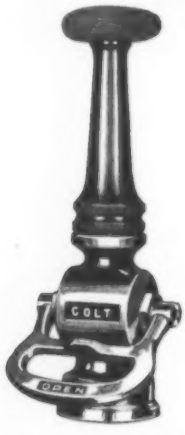
SEVERAL FRANCHISE AREAS OPEN IN EASTERN AND WESTERN UNITED STATES, IN CANADA AND IN SOUTH AMERICA. *WRITE FOR DETAILS*

The best nozzles are needed for effective fire control

When You Need Shut-Off Nozzles You Need the

COLT

The Shut-Off Nozzle With the Reputation



Our Forty Years' Experience in Manufacturing Nozzles cannot be denied, and backed by a Five-Year Guarantee on each Nozzle, you Obtain only the Best when you get a *COLT*.

Playpipes, Siamese — Plain or with Shut-Offs, Hydrant Gate Valves, 1", 1½", 2½" Quarter-Turn Shut-Off Single Valves, Water Thiefs. All types Brass Hose Connections.

Our Facilities for Making Up Your Special Items Are Unexcelled.

Your Jobber or Dealer Can Supply You with Guaranteed Colt Shut-Off Nozzles and Allied Brass Products.

Make Your Truck a Completed Fire Weapon with

COLT

Fire Protection Equipment

40 Years in Fire Protection

EXCELSIOR BRASS MFG. CO.
3452-54 N. Knox Avenue
Chicago 41, Illinois

ty watt transmitter is in service. The latter unit is so equipped as to be independent of public power supply should the occasion demand.

Prior to the installation of its own equipment, The Petersburg Fire Department had two-way communication through The Petersburg Police Department, but only upon selected apparatus. Since the installation of the fire department radio, the police department has maintained a two-way console in their dispatcher's office.

Early use of radio communication quickly demonstrated that dissimilarity of service rendered the joint use of one frequency highly impractical. It is the writer's opinion that such joint use will result in failure to achieve maximum benefit for either department.

The Petersburg Fire Department has found many advantages in radio controlled operation. A few of the many are outlined below:

1.) First due company reports self-evident conditions immediately upon arrival. This in many cases results in a turn-about order being given to apparatus still in transit. A definite saving in mileage.

2.) Apparatus leaving the scene of an alarm is placed in service upon the spot rather than after returning to quarters.

3.) Rapid communication has reduced the number of pieces of apparatus dispatched to certain classes of alarms.

4.) Officers and Men engaged in details away from quarters remain in service thereby conserving manpower.

5.) Hand sets of the "walkie-talkie" type have proven invaluable for relaying instructions and information. They have proven particularly beneficial in maintaining contact with working crews in the interior of structures or with remotely situated crews in large area fires. The conservation of manpower in this manner is of inestimable value to the small fire department.

There are of course, many other advantages and quite likely even we have not fully utilized or recognized still many more benefits to be derived from any radio system. We do, however, often wonder how we operated efficiently without this great aid.

Naturally, any aid has brought some disadvantages. The Petersburg Fire Department has been fortunate in that these disadvantages seem to have been rather small in comparison to the benefits obtained. The prime difficulty is, and possibly always will be that, it requires constant training to have men know how to transmit brief messages that convey clearly the situation with which they are dealing. Coded signals cover most routine messages and there can be no misunderstanding at either end. However, it is manifestly impossible to have sufficient codes to cover all situations.

After four years of 100 per cent two-way radio communication, the Petersburg Fire Department is of the opinion that radio is the finest method of fire department communication that the department has ever had, and the department shows a very definite pattern of increased efficiency since the radio system was installed.

T. G. Lennon, Chief, Saskatoon, Sask.: Our chief's and deputy chiefs' cars are equipped with two-way radio. We have our own transmitter in the fire department separate from the police. We hope eventually to become 100 per cent equipped.

We use radio in a "turn-around" system.

I feel radio is an asset to all departments.

Many fire departments are compelled, due to cost, to hook into police department radio. I do not believe in this system. Fire departments should have independent systems with their own call letters and signal, plus operators.

When all our apparatus is equipped with radio, familiarization inspections will be carried out daily, if necessary, by each and every company. This will also improve public relations.

Herbert F. Travers, Chief, Worcester, Mass.: Fifty per cent of our vehicles are equipped with three-way radio. We hope eventually to reach about seventy-five per cent.

We use radio in a "turn-around" system.

The very presence of radio with its implied efficiency is good public relations.

Radio should be used to a maximum degree. The fact that its function is that of communication, means it should be used to coordinate our work. We must plan sufficient installations in our departments so that all spans in ready communications will be bridged by radio, i. e., radio from fire ground to water supply for pumping operation; walkie-talkie portable sets from chief to chief to roofs or subcellars, etc. Control of companies whether in or out of quarters is now possible through radio. Emergency control or patrol in event of failure of fire alarm system is another function of radio.

Fire prevention work such as radio controlled block inspection by companies out of quarters is now possible with no missed alarms.

Lucian B. Smith, Chief, Billings, Mont.: We have two-way radio on three first run pieces out of each station and on the chief's car.

We use radio in a "turn-around" system to save mileage and attendant lowering of accidents, operating costs, etc., of motorized equipment.

Radio is ideal for ordering second alarms.

It would be impossible to inspect homes, business establishments and do training without radio. We find that home inspection is a wonderful public relations program, and with radio we can spend the time and do a real job.

G. Napoleon Guevin, Chief, Manchester, N. H.: Sixty per cent of our vehicles are equipped with two-way radio. We hope to ultimately be about ninety per cent equipped, the only exception would be about ten per cent of the apparatus located in the center of the city and covering but a small geographic area.

We use radio in a "turn-around" system.

I believe increasing the use of radio on apparatus and other vehicles and using walkie-talkies will improve fire control and extinguishment.

We use radio for inspections at the present time. It has saved us much unnecessary mileage.

Radio has been used very successfully in cooperation with civil defense and other municipal departments. We use it widely in intra-city and intra-state communications. Our use of radio with public utility companies has fostered a mutual understanding of our many problems.

V. C. Brightman, Chief, Kingston, Ont.: At present we have only the chief's car equipped with two-way radio. We hope ultimately to have all our vehicles so equipped.

A. C. Scheffel, Chief, Arlington County, Va.: About two-thirds of our equipment has two-way radio. We hope to eventually be fully equipped.

We use radio in a "turn-around" system.

If fire houses were equipped with two-way radio, it would be beneficial in the event the telephone should be out of order.

V. H. Higgins, Chief, Saint Joseph Mo.: At the present time three of our chiefs' cars are equipped with two-way radio.

Albert Luedeke, Chief, Freeport, Ill.: We have two-way radio on our fire protection district truck. We certainly would like to have all our apparatus so equipped.

The "turn-around" system is used with this truck.

Paul Meerdink, Chief, Muscatine, Ia.: All our pumpers are equipped with two-way radio. We expect ultimately to have all apparatus so equipped.

We use it in a "turn-around" system.

James A. Devlin, Chief, Chester, Pa.: About twenty per cent of our apparatus is now equipped with two-way radio. We expect to have sixty per cent so equipped by the end of his year and eventually to have all our vehicles.

I believe our wave length band should be changed as we are getting interference from taxis.

George T. Morgan, Chief, Wilmington, Del.: All our chiefs' cars are equipped with two-way radio. I don't know when we will be fully equipped, but all vehicles should be equipped with two-way radio especially if we are to get into any bombing.

Donald J. Kelley, Chief, Burlington, Vt.: Four pieces of apparatus now and three more pieces next year will make us fully equipped with two-way radio.

We use the "turn-around" system and it saves much mileage. Our city is long and narrow and on all alarms that one engine can take care of, a 10-18 call is sent out by first arriving companies to have all companies return to stations. A deputy chief always responds regardless of orders.

All apparatus companies should build a compartment near the battery to install the radio in. All trucks should have Leese Neville alternators, or something as good, installed for electrical needs.

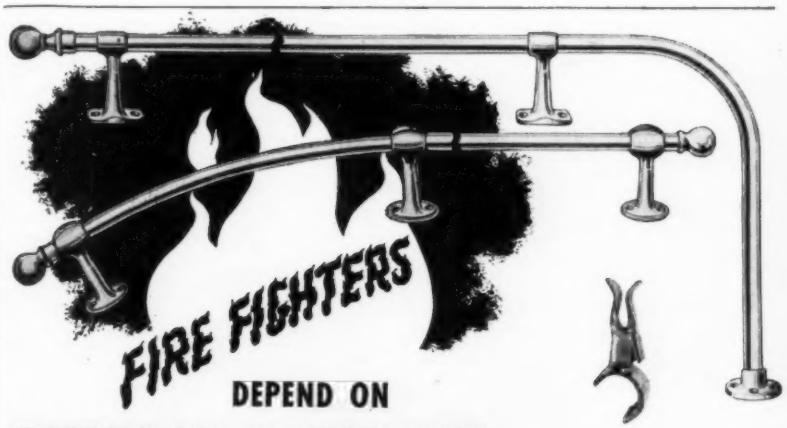
We use trucks to inspect most all the time. They can carry six or eight men, and we now allow our men to wear uniform caps and quick hitch coats for inspections. Many buildings get good inspections and the men are ready for call all the time.

Public relations can be made better if the people see that the fire department is progressive. By maintaining good inspection practice, the city taxpayers are bound to save money by having less fires. This is proven in almost every city that has good inspections regularly.

Ansul Dry Chemical Fire Extinguishers are safe to use. Ansul Dry Chemical is non-toxic and it produces no toxic fumes when in contact with the fire. Safety for the operator is a prime consideration in the design of all Ansul Extinguishers. Every part which will be subjected to pressure can withstand many times the actual operating pressure of the extinguisher.

Because dry chemical is a non-conductor, Ansul Extinguishers can be safely used on fires involving high voltage electrical equipment. The long range stream also allows fire-fighting of any type of fire at a safe distance.

SEE PAGE 675



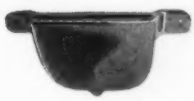
FIRE FIGHTERS DEPEND ON

ATTWOOD HARDWARE

Fire fighting is an exacting occupation. One mistake may be the last.

Likewise, the manufacture of fire fighting trucks is a very exacting business. Every piece of equipment must be dependable to eliminate any chance of mechanical failure.

For many years Attwood has supplied over 90% of the fire equipment manufacturers with standard and special hardware and fittings.



Contact Attwood regarding the manufacture of equipment to your specifications.

ATTWOOD BRASS WORKS

GRAND RAPIDS 4, MICHIGAN

New

ACME

PROTECT · A · VALVE

...the "STORM DOOR" for Gas Masks...

Now Acme introduces an auxiliary valve to solve the problems of frozen valves in sub-zero weather, and curled valves due to rubber solvents. Serving much the same as a storm door serves the home, the Protect-A-Valve is designed for use with the Acme No. 6 face piece—making it safe for use in temperatures as low as 50 degrees below zero. Write for complete details on this approved Acme development to overcome hazards of rubber-solvent atmospheres and *to be ready for next winter's freezing problems.*

ACME PROTECTION EQUIPMENT COMPANY

3037 WEST LAKE STREET
CHICAGO 12, ILLINOIS

June Fire Losses

Estimated fire losses in the United States for the month of June amounted to $58,585,000, it was reported by the National Board of Fire Underwriters. This was the greatest fire loss recorded for the month of June in over two decades.

According to Lewis A. Vincent, NBFU's general manager, this $58,585,000 loss represents an increase of 3.9 per cent over losses of $56,403,000 reported for June, 1951, and a decrease of 6 per cent from losses of $62,354,0000 reported for last May (1952).

Losses for the first six months of 1952 totalled $404,653,000. This is $17,212,000 more, or an increase of 4.4 per cent, over those losses reported for the same period in 1951, when they amounted to $387,441,000.

For the 12-month period ending June 30, 1952, losses totalled an estimated $748,617,000. This is an increase of 5.6 per cent over losses of $708,784,000 recorded for the corresponding 12-month period ended June 30, 1951.

These estimated losses under fire insurance policies include an allowance for uninsured and unreported losses.

One-Hour Fire Levels Factory Building

A general alarm fire, fed by explosions, destroyed a three-story factory building at Danbury, Conn., on April 22, causing damage estimated at $400,000.

The blaze was discovered shortly after 6 P.M., and 20 minutes later the roof caved in, and by 6:40 P.M., the building had been virtually levelled with only a smokestack and remnants of a brick wall still standing.

Flames from the burning structure, owned by Entin Realty Company, of Paterson, N.J., and occupied on the first floor by the Merritt Finishing Company, towered 150 to 200 feet high as 200 paid and volunteer firemen from approximately 20 companies in Danbury and nearby Bethel battled the blaze. One fireman, Joseph Bertalovitz, received a hip injury when he fell into the wreckage of the building.

The first alarm was received at 5:45 P.M. from Box 28, Maple and Union Avenues. Engines 1, 2 and 3, and Truck 1 responded under the command of First Asst. Chief John H. Burns, who ordered a second alarm turned in at 5:47 P.M. from Box 213, Crosby and Bridge Streets. At 5:51 P.M. a general alarm was sounded from Box 213, which brought out all seven city volunteer fire companies—the Pandanaram, Wooster, Water Witch, Phoenix, Beckerle & Company, Independent and Citizens companies.

Along with this group additional help came from four town volunteer groups —Mill Pa Plain, Beaver Brook, Germantown and Miry Brook, plus the Stony Hill Fire Department from nearby Bethel. Chief Ireland responded on the first alarm and took charge of fighting the fire.

Fire Chief Ireland, also Danbury's Fire Marshal, and investigators from the State Fire Marshal's office, conducted an investigation later to ascertain the cause of the fire. Recall was shortly after 8 P.M.

TOM MAGNER

Rural Fire Districts Legalized in Ohio

Ohio Attorney-General C. William O'Neill recently ruled that township trustees may create fire districts in unincorporated parts of a township and provide for a fire department through a bond issue up to $20,000 and maintained through a direct levy.

The opinion, which was directed to Van Wert County Prosecutor Sumner J. Walters, further held that where the township rate exceeds the constitutional 10-mill limitation, the tax would have to be approved by the electorate.

The issue arose in Pleasant Township, which contains most of the City of Van Wert, and residents of the township living within the city are being assessed for the maintenance of the city fire department as well as for fire protection which the city department furnishes to the township.

Aim of establishing the district fire department was to eliminate the excessive assessment against residents of the township living in the incorporated area.

Only a crumbling shell of a three-story factory building on Meeker's Lane, Danbury, Conn., remained on April 22 when fire, with loss estimated at approximately $400,000, gave firemen a two-hour battle before the fire was under control.

Annual Reports Received

Fires Fewer, Losses Up in New York

There were 330 fewer fires in New York City in 1951 than the year before, but fire losses increased $1,570,160, according to the Report of the New York Fire Department issued by Fire Commissioner Jacob Grumet.

The total number of fires dropped from 43,370 in 1950 to 44,040 in 1951. The drop, however, was in fires outside of buildings. Outside fires numbered 22,509 against 23,069 in 1950. Fires in buildings rose from 21,301 in 1950 to 21,531.

Total fire losses rose from $19,512,370 in 1950 to $21,082,530 in 1951. Fires in factories, lofts and business buildings showed the sharpest increase.

For the fourth sucessive year, city fire fighters maintained their record of confining more than 99.9 per cent of all fires to the area involved upon their arrival.

Altogether, firemen responded to 62,728 fire alarms last year. Of these 18,688, or nearly 30 per cent, were false.

Bonfires and brush fires headed the list of chief causes of fires. Of the 21,593 fires investigated by the fire marshal's office last year, 197 were of incendiary origin—an increase of twelve, and 204 were suspicious origin, an increase of twenty-four.

Accredited as the department's most important achievement during the year, according to the report, was the installation of a two-way frequency modulation radio-telephone net-work. The system, including five base stations and 500 two-way mobile stations, was 95 per cent completed by the close of the year.

Commissioner Grumet said, in the report, progress had been made in weeding out the men involved in the inspection bribery scandals.

* * *

Improvements Recommended for Charlotte, N. C.

Donald S. Charles, Chief of the Charlotte, N. C., Fire Department, recommends a number of major improvements in his fire department Annual Report for the year ending Dec. 31, 1951. Among these are: new fire stations in the Northwestern, Southeastern, and Southwestern sections of the city; a radio-equipped crash truck for the municipal airport, with two additional men; a new fire department shop building; continuation of the policy of purchasing a piece of fire apparatus annually; more office space for headquarters; and at least six more firemen.

Fire losses in 1951 were $390,891.61, compared with $339,271.54 for the year 1950. The department responded to a total of 2,504 alarms. The 10 engine, 6 ladder companies, and the lighting truck ran a total of 111,081 miles during the year.

* * *

Columbus, Ohio, Fire Losses Up

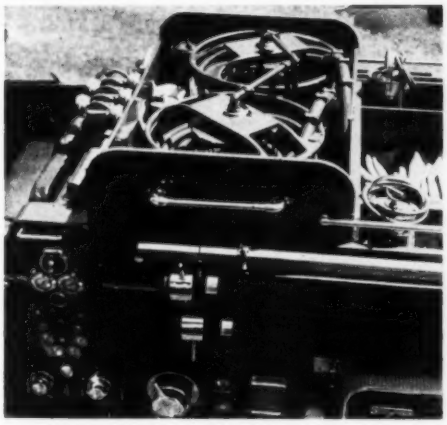
Fire losses in the city of Columbus, Ohio, for the year 1951 were $566,800, compared with $316,352 for the year 1950, according to the Annual Report of the Columbus Fire Department Chief Walter G. Strickfaden. The department responded to 13,756 calls. Of these, 3,838 were for actual fires. The department traveled a distance of 74,195.3 miles during the year.

Chief Strickfaden recommends in-

THE ZIERDEN REEL

. . . INVESTIGATE THE ADVANTAGEOUS FEATURES

THE NEW HORIZONTAL COILING ZIERDEN REEL gives you:



- Equal diameter hose coils throughout length of hose.
- Loose coils, complete absence of strain on hose while coiled.
- Large hose coils to eliminate tangling.
- Fast payout of hose.
- Remote operation.

for further information write

THE ZIERDEN COMPANY

3817 SO. K.K. AVE., MILWAUKEE 7, WIS.

Endorsed by America's Fire Chiefs Everywhere!

GLOBE SUITS

FOR over fifty years firemen all over the country have chosen Globe Suits because they are noted for their comfort, economy and durability. Among many outstanding features found only in Globe Suits are the New Neoprene* Interlinings. Before ordering any firemen's clothing send for the facts today. You'll see why Globe Suits are endorsed by America's Fire Chiefs everywhere.

Dept. FEM

Gentlemen:

Please send me FREE without obligation, your latest catalog and samples of materials. Also the name and address of the Globe Dealer nearest me.

*Name*_____

*Address*_____

GLOBE MANUFACTURING CO.

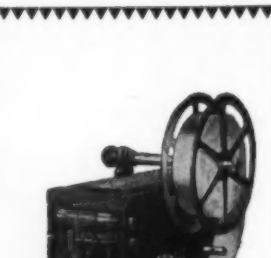
PITTSFIELD, N. H.

*Made with 100% DuPont Neoprene.

RECORD ALARMS *Automatically*

with the

PR-10 Fire Alarm



This Harrington punched tape register *automatically* makes records of fire alarms or other emergency signals.

We will gladly send literature describing the *Harrington* PR-10 as well as literature describing fire alarm boxes, positive non-interfering successive, street boxes, auxiliary station boxes, gongs, etc.

HARRINGTON SIGNAL COMPANY

MOLINE ILLINOIS

AUTOMOBILE

IDENTIFICATION

SHIELD—LITES—EMBLEMS

SHIELD LITE

3-Inch Light in Center.

Blue—Amber—Red Lens.

•

Complete for Installation.

•

Red Background. Polished Aluminum Letters.

•

8-Inch Square.

CAST ALUMINUM

LIGHTWEIGHT

$4.90 Each

24 or More $4.50 Each

•

Firemen & Chief Insignia in Place of Light.

Desired Inscription in Top and Bottom Panels.

GOLD CREST

SAFETY EQUIPMENT CORP.

STATE HIGHWAY 29 P. O. BOX 155

DUNELLEN, NEW JERSEY

ALL TYPES FIRE FIGHTING AND FIRST AID EQUIPMENT

creasing the department personnel from 518 to 591; improving the fire headquarters building; the purchase of two new 1,000 gal. triple combination pumpers and one 65-foot aerial ladder. He also recommends inauguration of a long-range apparatus replacement program. Also desired are 5,000 ft. of 2½ in., 2,000 ft. of 1½ in. and 1,000 ft. of 1 in. hose; repairs to fire department cisterns; replacement of 4-in. water mains with 8-in.; installation of a recorder for the fire prevention bureau; a drill tower, and numerous miscellaneous equipment.

* * *

Radio Gets Credit in Chief Schroeder's Report—Everett, Wash.

In his Annual Report for the Year 1951, Fire Chief F. F. Schroeder of the Everett, Wash. Fire Department, includes this statement: "All of our trucks are equipped with two-way radio. After a company is through at a fire, if they have their booster tank full and all of their hose ready for the next fire, they report in service by radio. During 1951 our companies were in service 71 hours and 50 minutes more because of the radio." The apparatus of the department traveled a total of 1,987.2 miles during the year.

* * *

Leicester, Eng., Fire Brigades Report for '51

The Leicester City Fire Brigades Report for the Year 1951, Chief Officer Errington McKinnell, showed 24 less calls than the preceeding year but an increase in malicious false alarms. Differing from reports of American fire departments, fire losses are not included.

* * *

Salt Lake City Losses Drop

According to the Annual Report of the Salt Lake City Fire Department, Fire Chief J. K. Piercey, fire damage for 1951 amounted to $216,692, the lowest loss in the past ten years. Chief Piercey attributes the reduction to (1) fire consciousness of the public in preventing fires and (2) the alertness of citizenry in promptly notifying the Fire Department when fires did occur. The total number of fires for the year was 1,891, compared with 2,324 in 1950. Improvements recommended include: 36 additional men; five more inspectors; construction of three new fire stations; rebuilding of a suitable Headquarters Station; relocating of two stations and removal of Fire Alarm Office into a fire-resistive building. A modern drill tower also is asked.

* * *

Chief Heinz, New Haven, Reports Improvements

The Annual Report of the New Haven Fire Department, Fire Chief Paul P. Heinz for the Year 1951, details the fire department structure, operating costs, fire losses, and is high-spotted by reports on training, new apparatus and recommended additional improvements.

The department continues to urge installation of automatic fire detection and alarm systems and still further improvements in apparatus and other details. It details the outstanding work being done not only in training the city's fire fighters, but also members of visiting departments from a wide area, at the much publicized New Haven Fire Training Ground.

Chief Heinz's report also illustrates another new addition to the ranks of

ecial apparatus built in the depart-ent's shops. It is called the Chemical arrier No. 1, and is designed to con-ol large scale flammable liquid fires. is located in the East Battalion and rries foam, dry chemical and fog quipment. The department staged an-her of its Field Days on May 23rd and lth.

* * *

etroit Arson Bureau Reports "Set" Fires Up

Detroit is the only city, we believe, hich publishes an Annual Report of rson activities. The Report, issued by he Detroit Police and Fire Department rson Squad, for the year 1951, in-icates an increase of 20% in the num-er of incendiary fires of all types over e preceding year.

Besides including a wealth of infor-ation on arson in all its phases, the eport is filled with statistical data on vestigations made and results ob-ined.

* * *

tlantic City Reports 93 Calls False ut of 699 Alarms

According to the 1951 Annual Report f the Atlantic City, N. J. Fire Depart-ent, Fire Chief Rex Farley, there were 9 alarms answered during the year, f which 156 were unnecessary or false arms. There were 93 of the latter. otal fire loss, insured and non-insured roperty, was $1,009,127.34, most of it used by a single large fire.

* * *

anila Fire Prevention Week omotional Booklet

Following his usual custom, Fire hief Cipriano Cruz, of the Manila, I. Fire Department. prepared and stributed an attractive, informative ooklet on fire prevention, with the le "Defend Our Country From Fire." he 60-page and cover booklet is ammed with information about dif-rent kinds of fires, and how to ex-guish them, together with data on erations of the Manila Fire Depart-ent.

* * *

e "Business" Up in Wichita

Fire losses in the City of Wichita, eb., for the year 1951, according to the nual Report of the Fire Division, Fire hief F. E. Wood, amounted to $379,-8—an increase of $94,438 over the 1950 ure. The department responded to a al of 2,843 alarms as compared with 50 the preceding year. Careless smok-g accounted for 112 of the fires.

Chief Wood's report details the activ-es of the Fire Prevention Bureau and her divisions of the department. The partment vehicles traveled 13,075 miles answering alarms and operating at s.

* * *

rfolk Officers' Training Course

The Report of the Norfolk (Va.) Fire llege, Officers' Training Course, hich contains a synopsis of courses ing from 1950, indicates the very in-sive officer training being conducted that fire department, under Deputy ief K. W. Sykes, Instructor.

Officers devoted much of their off-y time to the training, which in-ded studies on fighting simulated s in typical hazards, such as schools apartments, churches, etc.; fire de-tment administration, and the major tors of fire fighting. A number of out-e lecturers assisted in the curriculum.

FIRE WAGON

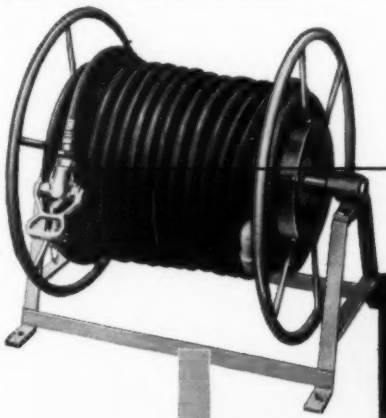
The Truck That Needs No Roads

Here's the answer to off-the-road fires—350-gal. booster —200 g.p.m. pump—pumps while under way—1½" hose and reel—uses foam or wet water—front-mounted power winch, 7500 lbs. capacity — 4-wheel drive, 8 speeds. The ideal companion piece.

LOW COST
COMPACT
RUGGED
4-WHEEL DRIVE
DEPENDABLE DODGE CHASSIS

Write for Literature

FIRE WAGON COMPANY, Inc.
MOUNT KISCO, N. Y.



FOR ONE MAN OPERATION

and fast!

W & K CONTINUOUS FLOW HOSE REELS

For complete information write Wirt & Knox Mfg Co., 2308 West York St., Philadelphia 32, Pa.

1. **Water is available instantly.** Water pressure is available at the nozzle even when hose is coiled on the reel. There's no delay caused by running out the hose first, then turning on the valve.
2. **A continuous flow of water is maintained while unreeling.** A swivel joint permits uninterrupted flow of water. There's no delay running back to turn on valves.
3. **Kinks and tangles are eliminated.** You unreel only enough hose to go directly to the fire. There's no delay to straighten hose.

Wirt & Knox Continuous Flow Hose Reels provide the means for instant action that keeps fire damage down. Reels are available in a complete range of sizes and can be easily installed on walls, columns, ceilings or floors.

WIRT & KNOX FIRE FIGHTING EQUIPMENT SINCE 1880

The biggest and best value in the field! . . . Complete with Skull Guard, Visor and Safety Helmet (can be used separately). Standard size, made to Navy specs. Treated for oil and gas fires. Fastest for rescue . . . safest for fire fighters. See your dealer or contact us.

ASBESTOS FIRE FIGHTING SUITS

$30.00 PER SUIT In lots of four $28 each

A Real Necessity in Every Department

WRITE — WIRE — PHONE

ABESTO-LEATHER GLOVE COMPANY

49 ACKERMAN ST. BLOOMFIELD, N. J.

Morning Pride

FIRE SUITS

Rubber or Duck
FLEECE LINED

NEW DOUBLE DUTY CHEST PROTECTOR

For Summer fold together and snap to coat.

For Winter unsnap for full protection of chest.

SUSPENDERS
MITTENS
GLOVES
DETACHABLE LININGS

See Your Local Dealer or Write
MORNING PRIDE MFG. CO.
1986 HOME AVE., DAYTON 7, OHIO

Persons in the News

Joe Fetters to U. of Missouri

J. I. (Joe) Fetters, widely and popularly known throughout the middle west, and at the F.D.I.C., for his constructive ideas on firemanship training, has accepted a position with the University of Missouri, Columbia, Mo., beginning July 1, 1952. His new title is Administrative Assistant, Adult Education and Extension Service for Firemanship Training.

J. I. Fetters

In his new connection Fetters will have charge of the firemen's training program in Missouri and will be assisted by University Instructor W. Bush Walden.

Chief Gehr, New Head of L. A. County Force

Chief Cecil R. Gehr, who was appointed Chief of the Los Angeles County Fire Department on April 1, 1952, succeeding Spence D. Turner, as one of his first moves in office urged the County Supervisors to set up $127,500 in the 1952-53 budget to finance a fire training school for County fire fiighters, in East Los Angeles.

Cecil R. Gehr

The station, as proposed by Chief Gehr, would be the center of learning for all rookie firemen of the county, and thousands of civil defense volunteers. The site proposed for the school would include as one unit an exact replica of the recently completed East Los Angeles Fire Station No. 27 and would cost $82,500. The second unit would be a 5-story, 65-foot high fire training tower complete with gas and smoke chambers. A third unit, to cost $5,400, would be a fire engine testing sump.

Chief Gehr's appointment was made permanent on June 17, following Civil Service examination. The Chief, who is 49, joined the department 27 years ago as a fireman. In 1926 he was appointed an engineer and promoted to captain in 1927. In 1940 he was made Battalion Chief, which post he held for 9 years until he was made Deputy Chief in 1949.

At the same time Chief Gehr was appointed head of the County Department, Keith E. Klinger was appointed Deputy Chief.

Chief Traeger in New Position

Former Fire Chief Earl A. Traeger, of the Minneapolis Fire Department, now heads the fire force of Day and Zimmerman, operators of the Lone Star Ordnance Plant, Texarkana, Texas.

Chief Traeger joined Day and Zimmerman on May 1st, last, and immediately set about organizing a fire department, fire prevention bureau and establishing a fire training program.

It's Now Colonel Alsip

One of the highlights of the 28th Annual Fire College held under the direction of the Illinois Firemens' Association in cooperation with the Illinois State Fire Marshal and the College of Engineering of the University of Illinois, at Champaign, Ill., June 10, last, was the commissioning of Roy W. Alsip, retired Champaign Fire Chief, and spark-plug of the Fire School, as Honorary Kentucky Colonel.

Presentation of the commission was made on behalf of the Governor of Kentucky by Mrs. Susan B. Rutherford, Assistant Secretary of State, Frankfort, Ky. Mrs. Rutherford described the surprised Alsip as "one of the finest men in fire prevention I've ever heard of."

Rescue and First Aid

(*Continued from page* 631)

construction of rescue and emergency apparatus, and collaterally, the cost. It has also necessitated far more intensive and specialized training of rescue and first aid personnel. A Red Cross first aid certificate is an excellent asset, but the modern rescueman must be trained in far more than first aid. If we are seriously to consider the atomic age into which we are entering, with its radioactive hazards, it begins to look as if tomorrow's rescue personnel will have to be in the superman class.

The catalog of emergencies which the average municipal fire rescue squad encounters in the course of a year, like the list of emergency facilities, is continually being increased.

For the benefit of our readers who may be contemplating installation of a rescue or other emergency unit, we

submit in two lists of what the authors term basic or fundamental equipment which should provide the foundation, at least, of the modern rescue squad. One list is submitted by an officer of a large municipal rescue company; the other by the head of a village rescue and emergency company. These are in no way inventories of all the equipment carried but are intended as a check-list for basic supplies only.

To return to training: in order to keep abreast of modern developments in first aid treatment, and to raise the standard of training, most first aid squads have medical advisers, and maintain close cooperation with local medical authorities, doctors and hospitals. A few squads, such as North Plainfield, N. J., and Metuchen, N. J., have Cadet Corps for training boys for future enrollment as regular members. Many squads find that a women's auxiliary corps tends to raise the moral tone of the organization and are most effective in raising funds for the purchase and maintenance of equipment.

The Financial Side

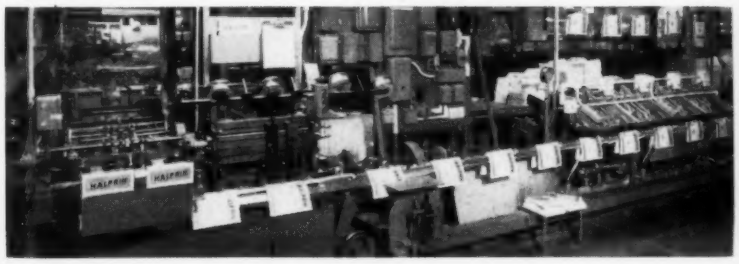
The expense of operating a rescue and first aid squad is no small matter. A modern custom built ambulance, let alone a full-scale rescue truck, runs upward of $10,000. Oxygen tents cost about $700, and iron lungs and resuscitators run into the hundreds of dollars. The cost of replenishing oxygen in inhalators and repiratory devices, and the purchase of oil, gasoline and tires, all call for constant outlays. As an example, the Raritan, N. J., Safety Council spends about $13,000 yearly on its three rescue squads, and the Roanoke, Va., squad has an $8,000 yearly expense budget.

The most effective and most common method used by squads for raising funds in the house-to-house canvass. Members of well disciplined and efficient squads are respected in their communities and are cordially received by residents of the area served. Many squads have women's auxiliaries that sponsor dances, raffles, and cake sales, in addition to aiding in house-to-house canvasses. Various devices, such as coin cards, cardboard coin banks, and bubble banks have been found useful when properly employed. "Tag Days" are popular in some areas. The Devil's Lake, North Dakota, Squad has a novel membership plan, assessing family groups $2.00 yearly and individuals $1.00 yearly. The plan has 1,100 paid-up members, and is going strong. A number of Pennsylvania squads are maintained on much the same basis, the membership permitting transportation of a sick or injured person by ambulance without other charge. One town in that state largely supports the entire fire department, including the emergency unit, by a single annual letter appeal to all citizens of its area.

Many such squads have been fortunate in receiving donations of money and equipment from service and fraternal organizations, veteran's groups, union locals and private citizens. It is reported such donations have been ruled exempt from tax. Recently the Peapack-Gladstone First Aid and Rescue Squad of New Jersey, was the recipient of a $30,000 donation from a private citizen to pay for a new squad headquarters, and other citizens donated the land and architectural services.

In 1951 the State of New Jersey

Here they come
One A Second!



HALPRIN'S CATALOG M100

80 PAGES — THE FIRE TRADE'S FINEST CATALOG

Lists all fire department needs. Every item is fully described with large illustrations. Low prices are listed F.O.B. destination. Among the hundreds of items are every type of nozzle, fire and suction hose, fittings, tools, sirens, lights, extinguishers, protective clothing, helmets, badges, masks, safety equipment, signs and ladders. This catalog is a must for your reference library.

SEND FOR YOUR FREE COPY OF OUR FALL CATALOG M100

HALPRIN SUPPLY CO.

1355 SOUTH FLOWER STREET, LOS ANGELES 15, CALIF.

ONAN
Emergency
Electric Plants
for
Civil Defense

No matter what happens to central station power during a bombing attack, electricity for essential defense needs is always available with Onan Electric Plants. Onan units, mounted on truck or trailer, or carried in the trunk of a car, can be rushed to any point where power and light are needed. Sturdy and dependable, Onan Electric Plants are an important link in a city's defense against disasters of any kind.

Power & Light for Every Need

Portable, Mobile, or Stationary
400 to 35,000 watts. A.C. or D.C. models.

See us at the show—
BOOTH NO. 57

Onan PRODUCTS

D. W. ONAN & SONS INC.

5697 UNIVERSITY AVE., MINNEAPOLIS, MINN.

IDENTIFICATION PLATES

Firemen's three dimensional silhouette style identification plates especially made for outdoor use, white base, plastic, lettering in FIRE DEPARTMENT RED.

Wording under fire department: — CHIEF, ASSISTANT CHIEF, CAPTAIN, LIEUTENANT, VOLUNTEER, MEMBER, ENGINEER, DRIVER & POLICE. Priced at 63 cents each or $1.25 pair.

Made special with the name of your town, township, association, club, etc., for you. 50—$43.75, 100—$62.50, officers named; furnished from stocked plates, or a special cut inverted lettering, limit 15 to 18 letters, SAME MATERIAL, $4.25 per pair.

Can be cemented onto body of car, attached to license plate or used on sun visor, 9½ x 2 inches in size.

(Price furnished for industrial badge plates, school pins, automobile dealers, also special occasion or design.)

To order: specify kind and number wanted, enclose check with order @ 2% off, or, if preferred, order will be mailed P.P. C.O.D., shipping charge added.

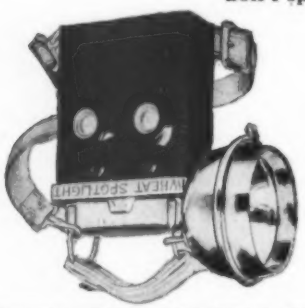
E. B. LANE, Distributor

32 Greenwood Avenue
TOLEDO 5, OHIO

SEEING THINGS?

NO SIR! Even in this position **WHEAT** RECHARGEABLE

SPOTLIGHTS don't spill!



SEEING THINGS? YES, SIR!

25,000 beam candlepower to penetrate smoke for 5 and more hours—it's a Wheat battery RIGHT WHERE YOU NEED IT—WHEAT SPOTLIGHTS are compact, lightweight and easily carried. NO GUESS WORK—a WHEAT CHARGE INDICATOR tells you that your light is ready to go. No Dry Batteries to store. Specify—WHEAT LIGHTS on all new apparatus.

Ask your dealer for a demonstration or write for details.

KOEHLER MANUFACTURING CO.
HOWLAND PLACE MARLBORO, MASS.

amended its Municipality Contribution Act, raising to $3,000 the amount that a municipality or county may contribute to each rescue and first aid squad serving their areas. However, in past years only a few municipalities contributed substantial sums to the squads. The same state has also extended its Workmen's Compensation Law to cover volunteer rescue and first aid men injured in line of duty, similar to the existing coverage for volunteer firemen. New York and other States have done likewise. In addition, the New Jersey State Motor Vehicle Commissioner permits members of these services to display a purple or blue light on their private cars for identification when on duty calls.

Any group or individual planning to organize a rescue, emergency or first aid squad, should first painstakingly review the legal limitations under which his organization will have to operate. Particular attention should be given liability compensation and protection of the squad drivers and first aiders, operating not alone in their own areas but outside areas as well. They must be protected individually and collectively against suits for damage resulting from collision and injury to other vehicles and/or persons.

The volunteer rescue and first aid organization in the smaller communities or rural areas plays an important role. It is fulfilling a purpose for which it is especially suited; it is doing a job that no other agency is in a position to assume; it is operating with an enthusiasm and efficiency that endears itself to those whom it has brought aid and hope when all was despair.

Operating, as it does, in a field open to criticism from many sides, it is naturally imperative that such units develop a high degree of conduct, efficiency and scientific knowledge. That does not mean that their members should attempt any medical or surgical work, or in any way usurp professional duties. At the same time, there is no excuse for such personnel not taking their job seriously, and learning and knowing all that they possibly can assimilate about their work. Their success depends upon the respect they engender, and the caliber of service rendered to the community or area they serve.

EMERGENCY RESCUE REQUISITES
As viewed by a big city rescue squad officer

Two-hour breathing apparatus. One-half-hour demand type breathing apparatus. Fresh air masks, lengths of 150 ft. air hose and fresh air pumps. Telephone equipment for masks.
Inhalators and resuscitators.
Oxy-acetylene cutting equipment.
Portable electric generator—at least 1,850 watts. Floodlight equipment, 500 w. and 250 w. lights. Electric power tools, saws, drills, power hammer chisels.
Heavy-duty winch—at least 5-tons capacity. Steel cable.
One-ton differential hoist—portable tripod.
Heavy-duty jacks—hydraulic and screw capacities up to 35 tons).
Towing cables and chains.
Refrigeration emergency equipment, including rubber wading pants, hood, shut-off keys and wrenches.
High tension electrical equipment; long-handled insulated tongs and lineman's equipment.
Asbestos suit; rubber exposure suit.
Portable boat or rubber raft; life preservers.
Two-way radio and walkie-talkie sets.
Trench jacks; various lengths of pipe for cave-in work.
Smoke ejector equipment.
Life-gun equipment.
Shallow water diving equipment; underwater light.

Your Community Demands the Safety of... Hewitt-Robins Bi-Roll Municipal Fire Hose

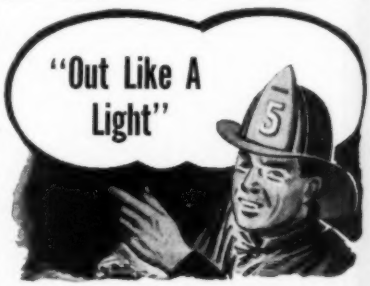
Safe—Easy to Handle: Hewitt-Robins Bi-Roll* Hose gives you more flexibility, minimum elongation, less twist . . . because it is constructed of carefully selected, thoroughly tested, long staple cotton and properly vulcanized rubber —processed in the hands of skilled workmen under experienced supervision.

Long Dependable Service: The tubes are handmade of four plies of laminated rubber possessing high pliability and resistance to cracking and aging. The jackets are antiseptically treated for prevention of mildew and rot.

For complete fire hose facts, write for details.

HEWITT-ROBINS HR INCORPORATED
STAMFORD CONNECTICUT

DIVISIONS: Hewitt Rubber • Hewitt Restfoam® Robins Conveyors • Robins Engineers
*Copyright applied for



How fast is UNOX Penetrant—Wetter Water? A Miami, Florida Lieutenant said, "It's a good deal like turning out a light. By the time we could walk from one end of this 6-room house to the other with two 1½-in. fog lines, the fire was out."

You want speed too. Get UNOX Penetrant for your Department.

"UNOX" PENETRANT

UNOX is a trade-mark of Union Carbide and Carbon Corporation.

CARBIDE AND CARBON CHEMICALS COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd St. UCC New York 17, N. Y.

MODERN UNIT TYPE FIRE DEPARTMENT FIRST AID EQUIPMENT

'PAC-KIT' provides standard products packed in individual cartons with illustrated First Aid Instructions.

Electrically welded 20 gauge steel, dust and moistureproof cases provide complete protection of contents and long service.

24 Unit and 36 Unit Sizes
For FIRE HOUSES & VEHICLES

Write for literature and prices

THE PAC-KIT COMPANY
P. O. Box 1306
GREENWICH, CONN.

The New Improved Dayton
COMBINATION EXPANDER
6 FEATURES IN 1

Expander for Hose Sizes from ¾" to 3"
Greater Expansion Greater Economy
Easy to operate
Segments Furnished with Adjustable Spacer
Visual Indicator to Determine Amount of Expansion

BE PREPARED FOR ANY EMERGENCY
THE COST IS LOW
Send for Illustrated Bulletin

Dayton Fire Equipment Co.
1242-48 W. 2nd St., Dayton 7, Ohio

Body bags; Stokes stretchers; army type stretchers; safety harness; electric heating pads; chemical heat blocks.
Combustible gas indicator equipment.
Block and tackle.
Forcible entry equipment.
Extinguishers.. Asbestos, rubber and wool blankets. Burn-kit.

Note: This officer suggests the following future desirable developments:

1. Smaller units for greater mobility in heavy traffic, and a few giant units built around a heavy-duty wrecking truck chassis and body. Since street widths remain unchanged, and trailer trucks and buses become larger, and parked cars increasing, the only solution for greater mobility for rescue companies, and indeed all fire department units, is in smaller, compact units and a better distribution in congested areas.
2. Another development to be pushed is special units to generate electricity, or to compress air, to operate a complete line of power tools.
3. Better tools and equipment for rescue work at building collapses and cave-ins.
4. Breathing apparatus that can be recharged safely in contaminated atmospheres.
5. Better communication facilities between men working in deep in contaminated atmospheres of ships' holds, sub-cellers and large refrigerated buildings and with men outside.
6. Better fire protective clothing, similar to that being developed by the U. S. Navy.
7. An annual rescue squad symposium on a nationwide basis.
8. Development of a rescue squad manual or handbook.

EMERGENCY RESCUE REQUISITES

As viewed by the small town or village rescue officer.

General
Adequate working area (in the rescue vehicle).
Adequate storage area—now and future (ditto).
Workability, for first aid and property protection.
All-weather protection.
Adequate power.
Adequate light.

Personnel Protection—First Aid
Provisions should include facilities for under-cover first aid and emergency medical attention separated from property protection or fire fighting equipment.
Equipment should include: First aid supplies&working and reserve stocks; medical equipment and supplies, basic surgical kit; operating or inspection light; eye magnet, otoscope and ophthalmoscope. Hot water supply. Sterilizer. Burn sprays. Oxygen—Linde "Q" cylinders. O_2 therapy masks. Resuscitators and inhalators. Blankets—rubber sheets. Heat blocks and stretchers.

Property Protection
Lights—flood and spot. Smoke ejectors. Jacks—hydraulic. Wedges. Forcible entry tools. Gas shut-offs. Gas detector. Oxy-acetylene cutting outfit—Purox "E" with Linde "Q" size oxygen and "WA" acetylene cyl. Small tools. Shovels. Tarpaulins. Block and tackle. Chain. Bag of sand. Electric drill—heavy duty. Portable generator and lights. Ladder.
(Unit should be two or three-way radio equipped with working space for operator.

Lee Heads N. Carolina Fire Group

Edward S. Lee, of Greensboro, N. C., was elected president of the State Fire Fighters Association of Fire Fighters at the June 13th annual convention in Asheville, N. C. Other new officers include four vice-presidents, W. Otis Dowdy of Charlotte; W. E. Pollard of Raleigh; Pender Frankling of Durham, and C. D. Hensley of Asheville. H. E. Blackmon of Charlotte, was re-elected secretary-treasurer.

D. G. SPENCER

It pays to be prepared!

Had the Triple-Jet Safety Nozzle been available to home and property owners when incendiary bombs were used during the last war, many lives and much valuable property could have been saved. The "TRIPLE-JET SAFETY NOZZLE" (low volume type) can be used safely on magnesium and similar hazards. It causes the magnesium to burn up quickly and uniformly and without the heavy flare-up that results when a straight stream or heavy spray comes in contact with this type of fire and at the same time prevents other Class A material from igniting.

Your Fire Equipment Dealer Can Supply You.

POST $3.00 PAID

AVAILABLE IN LOW VOLUME—2-4 GPM.
AVAILABLE IN HIGH VOLUME—5-8 GPM.

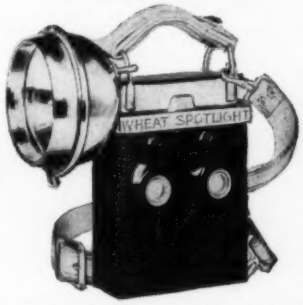
"ASK ANY FIREMAN"

FOGG-IT SALES CO.
Manufacturers and Distributors
P. O. BOX 1985
MODESTO 16, CALIFORNIA

When you need light—do you want — FLASH or LIGHT?

Before you specify consider

WHEAT
RECHARGEABLE LIGHTS
(no dry batteries)



WHEAT RECHARGEABLE LIGHTS GIVE YOU

1. UNFADING LIGHT—25,000 beam candlepower for 5-6 hours continuous operation.
2. DEPENDABLE LIGHT—bulbs designed for 300 plus hours. With one WHEAT CHARGE INDICATOR (separate unit) you can check all your WHEAT lights between alarms.
3. LOW MAINTENANCE—battery may be re charged over 200 times.
4. PROVEN SERVICE—thousands in fire service —a trusted friend at a fire.

For details and address of your local dealer write

KOEHLER MANUFACTURING CO.
#1 HOWLAND ST., MARLBORO, MASS.
Leaders in Portable Lighting for over 35 years.

PacKo EMERGENCY CUTTING EQUIPMENT

LIGHT WEIGHT . . . EASY TO WEAR. ABSOLUTELY SAFE AND RELIABLE.

PACKO Emergency Cutting Equipment will be found invaluable. It will enable you to cut away steel barriers in a few minutes . . . enable you to get to the source of a fire quickly . . . enable you to make a rescue . . . that by any other method would require hours.

The unit is self-contained . . . complete with pressure proved cylinders, regulators, hose and non-backfire cutting torch. Order a set today Carried by leading fire departments in the country.

The WELDERS SERVICE CO., Inc.
229 Blvd. of Allies, Pittsburgh 22, Pa.

Firemens BADGES by EVERSON-ROSS

Write for folder
EVERSON-ROSS
88 CHAMBERS ST NEW YORK 7 N Y

New Fire and Gas Alarm Device

The Factory Mutual Laboratories have developed a new fire detector and alarm device, designed to give warning of accidental fires, even in the smoldering stages when there is insufficient heat to operate the usual thermostatic fire detector. It is said to respond rapidly to temperatures above normal; and may be used as an alarm device to warn of the presence of combustible gases or vapors in very low concentrations.

The detector operates through a relay from an increase in the electrical resistance of a hot wire, as a result of rise in temperature due to catalytic combustion of unburned distillation gases which are present in the initial stages of most fires, particularly smoldering fires. The novel feature in the design of this new fire detector is said to be the construction of detecting and compensating elements so as to cancel out substantially all extraneous influences, such as variations in normal air temperature, air movement and humidity or other changes in composition, affording a higher degree of usable sensitivity than has been attained heretofore.

The device is reported stable over long periods of time; is not subject to catalytic poisoning, and cannot act to ignite any chance mixture of combustible gases with air in explosive proportions. Except for the detecting and compensating elements, all parts are readily available commercial devices.

For smoke detection alone, the new device is not considered as sensitive as a good modern light beam and electric eye detector, but it is simple, economical, and requires practically no maintenance. It will detect certain fires due to the presence of partial products of combustion even though there is visible smoke. For auxiliary fire detection by temperature effect alone, the new device is about as fast in response as the best available thermostatic devices.

A patent has been applied for; and it is the hope of the F. M. Laboratories that arrangements can be made for the manufacture of the device so as to make it available to the general public. The Factory Mutual Laboratories, 184 High Street, Boston 10, Mass., invites inquiries from manufacturers who would be interested in developing this device commercially either in the fire detection and alarm field or as a combustible gas alarm.

Government Fire Losses Down

Government fire losses in the last fiscal year dropped to the lowest total in eight years, with about $8.5 million in fire losses, according to the Federal Fire Council.

This is a decrease of 20½ per cent from the previous year's loss. The report states there were 545 fires in 1951 in which loss to the Government was $500 of more, and accounted for 89 per cent of the Government's total fire damage. Fourteen of these fires had loss of $100,000 or more each.

It is recorded that 29 fire deaths occurred on Federal property last year, 20 fewer than were reported in the fiscal year 1950. Although recorded fire losses and casualties in Government business are improving, the Council cited statistics showing that 488 persons lost their lives in more than 47,000 fires during the last eight years, while monetary loss totaled nearly $187 million.

IRVING W. JOHNSON

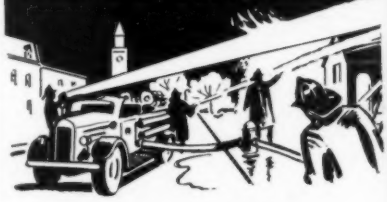
The Voice of Authority!

No longer is it necessary to yell and shout in order to be heard, for *The Audio Portable Electric Megaphone* will amplify your voice 2500 times! Audio megaphones enable you to direct your men clearly and distinctly at fires, even in smoke-filled buildings or rooms, guide rescue crews, assist on the training grounds, and give instant warning in case of danger. They have been approved for Civilian Defense requirements.

Write or wire for full details and our new low price!

AUDIO EQUIPMENT CO.
805 Middleneck Rd., Great Neck, N. Y.

Power failure is no light matter!



FAIRBANKS-MORSE Generating Sets

Many things can cause power failure—fires, explosions, traffic accidents, human error. And all of them can lead to injuries, property damage—even death. Then may come lawsuits and staggering debts.

Your own business is not immune. But the severity of the disaster can be minimized if you have a Fairbanks-Morse Generating Set standing by to cut in instantly when city or rural high line service is halted.

A Fairbanks-Morse Generating Set is the cheapest insurance you can buy! Ask your local Fairbanks-Morse dealer to show you why. Or write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE,
a name worth remembering

The Fireman's Choice

Powerful Light

When he needs it—where he needs it

Big Beam

PORTABLE ELECTRIC HAND LAMPS

Model 700
2000-foot beam

Most powerful, heavy-duty hand lamp of its size. Adjustable 6-inch head. Operates on four standard No. 6 dry cells.

Model 211
1500-foot beam

Popular price, light weight, easy to carry. Adjustable 5-inch head. Operated on two standard lantern batteries.

Write for folder on complete information on these and other Big Beam dry-cell and storage-battery models.

U-C LITE MANUFACTURING CO.
1041 West Hubbard Street
Chicago 22, Illinois

I've Been Penetrated!

...with the *improved* FIREWATER*, the chemical penetrant that *now* gives you:

- Corrosion no greater than *tap water!*
- Surface tension of *31 dynes per square centimeter* when diluted 600 to 1!
- Penetration that actually *sinks* raw cotton (as well as ducks)!

Already recognized as being the most effective, least expensive wetting agent on the market, the new FIREWATER* is even farther ahead of the field. WRITE TODAY, ON YOUR OFFICIAL LETTERHEAD, FOR FREE SAMPLE AND NAME OF DISTRIBUTOR NEAREST YOU!

*Trade Mark Registered

THE
FIREWATER
COMPANY
NUMBER 1 FIRST STREET, LOS ALTOS, CALIF.

Old Fire Engines Never Die

(*Continued from page 649*)

run, the life of the apparatus, and the finish, should be considerably prolonged.

This question of cleaning after every run introduces the problem of who's going to do it—especially in the volunteer fire department having no paid drivers or caretakers. Everybody's business is nobody's business when it comes to maintenance of fire apparatus. The cleaning and tidying-up of apparatus and equipment after a prolonged, tiring workout is distasteful, if not downright obnoxious to most fire fighters—paid and volunteer. But it is a job that must be done. If postponed, the problem becomes all the more acute, and there is always the possibility that equipment may fail because of a shortcoming which the after-the-run inspection and cleaning up might have disclosed.

The majority of the smart volunteer departments establish just who is to do the cleaning and maintenance work, and when and how it is to be done. No credit for attendance at the fire is given unless members attend to their delegated duties of "committee work." There are usually more members of a company on hand after a run than at any other time except meetings, and at the risk of displeasing some, they should get to work on the apparatus until it is in shape for the next alarm or inspection. Naturally, the regulations or orders should see to it that the "housework" is evenly distributed among all hands, and does not become a burden on a few willing workers.

It is considered good practice to wash the tires, wheels, running boards, and under the fenders after each run, using a mild detergent and warm water, if needed. The body may be wiped off with a soft dry rag, except where muddy or dirty. On such spots, washing with clear water and a sponge is required.

If the entire truck needs washing, it is advisable to place the vehicle in the shade until the hood cools. However, if the apparatus has been run in the rain, the hood may be cool enough to give it a going over upon return to quarters.

A practice followed by a number of companies is worth emphasizing. This is to carry a rag, or rags, on the apparatus to be used to clean the booster hose at the fire as it is being re-wound.

In addition to being cleaned after runs, the apparatus should receive a periodic cleaning, preferably weekly, and should be dusted every day. The cleaning of hose and other equipment on the apparatus is another task, not within the scope of this message. It should be pointed out, however, that where runs are infrequent and dirt will collect on the equipment, tools and fittings of apparatus as well as on the body. Because of this fact, cleaning maintenance should not stop with the wiping off of the body and trim, lights and so on, but should include the whole ensemble. In this connection, some departments follow the practice of periodically removing ladders and tools and other equipment from the apparatus for cleaning and inspection, not only of the equipment, but of the racks, rollers, clamps and other holders. Some volunteer companies follow the practice of conducting this indoor inspection and

SAVE LIVES!
MAKE BIG PROFITS!

FIRE-LITE

Automatic

HOME FIRE ALARM SYSTEM

With U. L. Approved Rate of Rise Detectors

Safeguard lives and property with FIRE-LITE and make big profits! FIRE-LITE is a new, low cost system that automatically and instantly detects fires, sounds a shrill, loud alarm, arouses family before fire gains headway.

We supply demonstrator alarm, sales plan and illustrated book that clinches sales! Every man wants to protect his family and property. You can easily sell that man a FIRE-LITE and make money!

Write Today for Information

Approved for FHA Financing

FIRE-LITE ALARMS
174 Shelton Ave., New Haven 2, Conn.
Member National Fire Protection Association

FIRE and POLICE UNIFORMS

SHIRTS
BADGES
CAPS
ACCESSORIES

RUSSELL UNIFORM
NEW YORK

RUSSELL UNIFORM CO.
192 Lexington Ave.,
New York 16, N. Y.

Please send free catalog checked below:

☐ Fire Department Uniforms and Equipment

☐ Police Department Uniforms and Equipment

Mr. .....
Address .....
City..... Zone... State.....

cleaning on days when outside drills cannot be conducted.

The possibility of the finish fading because of the sun focussed through windows has been mentioned. This handicap is more acute where the fire stations are so built that they face the south or west so that the apparatus may be bathed in sunlight most of the day, if it is too near the doors, or windows. Some fire station designers recommend lots of glass in fire station doors, and overlook the possible injury this may cause to apparatus trim, as well as the heating problem it creates. If some glass must be used to furnish light, it is considered advisable not to have it placed too high on the doors. As previously mentioned, keeping the body finish coated with wax does much toward protecting it from the harmful effects of the sun.

Chrome parts need only be cleaned and waxed with the rest of the apparatus and require no special attention unless neglected. Any acceptable chrome polish, will bring it up if it is in bad shape, but too much washing, especially with abrasive polishes, will wear away the surface plating. Any good polish may be used to shine brass and nickel parts, but care should be taken not to get polish on the paint surfaces. If apparatus is kept clean, there will be little need for using a cleaning agent before applying wax. Waxing the finish and chrome parts with a good brand of wax should be done two or three times a year. Cleaners remove a certain amount of the surface every time they are applied to the paint and they are therefore no help to the protecting coat of varnish given the gold leaf used for stripes and lettering. It is better practice to avoid their use.

A small supply of paint to match the finish on the apparatus usually can be purchased from the manufacturer and this can be kept on hand for touching up scratches or for repainting where the finish may be badly damaged. However, it is well to remember that in the latter case, if there is a body repair or paint shop in the vicinity, it may be advisable to refer this work to the professional.

Suitable paint is available from any paint or automobile parts store for use on running boards, rear steps and tires. Recently, touch-up kits for repairing damaged gold stripes and letters with genuine gold leaf have appeared on the market. These kits have limited applications and any extensive touch-up operation should be referred to a regular striper or sign painter.

Finally, proper maintenance calls for keeping all mechanical operating parts, as well as the under side of hoods and pans, free of grease, oil and dirt. The old saying "out of sight, out of mind" may apply to the overhauling and cleaning of these "hidden" details but it is perhaps even more important that these items receive proper maintenance than

Rate $8 per inch less 10% for three or more consecutive insertions.

Classified Advertisements

Closing date for copy 25th of month preceding date of issue.

! CLOSE OUT SALE ! SAVE MONEY HOSE & ACCESSORIES AT GREATLY REDUCED PRICES

UNUSED SURPLUS

1½"x50' DJ CRL fire hose, unused, but soiled..... $ .58 ft. cpld.
2½"x50' DJ CRL fire hose, unused, but soiled..... $ .78 ft. cpld.
1½"x50' SJ CRL fire hose, unused, but soiled..... $ .29 ft. cpld.
2½"x50' SJ CRL fire hose, unused, but soiled..... $ .49 ft. cpld.

UNUSED & CLEAN FACTORY PACKED

1½"x50' SJ CRL fire hose.... $ .37 ft.
1½" Couplings attached... $ 4.50 set
2½"x50' SJ CRL fire hose.... $ .64 ft.
2½" Couplings attached... $ 6.75 set
2½"x10' Hard suction hose... $14.50 lgth., cpld.
1"x50' Booster hose ..... $ .33 ft.
4"x16' DJ Soft suction hose, 4½" couplings, long handle female..... $16.50 lgth., cpld.

BRASS ITEMS

1½" fog nozzles, 3 position (Well Known Brands) w/4' applicator...$22.50 *
Mechanical Foam Playpipes (Leading Manufacturer) w/adapter (Cost $50.00 ea.) .....$ 8.50 ea.
2½" Shut off nozzle, w/ladder hook...$37.50 ea.
2½"x1½"x1½" leader line siamese w/quarter turn valves.....$24.50 ea.
2½" nozzle holders .....$ .95 ea.
2½" hose caps & chains.....$ 2.50 ea.
2½" double females .....$ 7.50 ea.

* Complete.

IMMEDIATE DELIVERY

TOWSON HOSE & RUBBER CO.
104 West Joppa Road,
Baltimore 4 ,Maryland
Phone Towson 1672

AMBULANCES FOR SALE

1951 SUPERIOR-CADILLAC (new)
1949 METEOR-CADILLAC (sanders), 100%
1948 FLXIBLE-BUICK (low mileage)
1947 S&S-CADILLAC (100%)
1946 FLXIBLE-BUICK (very reasonable)
1941 FLXIBLE-BUICK (excellent)

Fully equipped, ready to operate, guaranteed

SUPERIOR-CADILLAC DISTRIBUTOR
WOLFINGTON BODY CO., INC.
33rd & Arch Sts., Philadelphia 4, Penna.
BAring 2-5252

Showroom, Parts & Service:

5801 Lansdowne Avenue
Phone: TRinity 7-8882

SURPLUS FIRE HOSE 1952 PRESSURE TESTED

Excellent grade of used fire hose obtained from U.S. Navy replacement. Complete with couplings. Every length inspected and water tested at listed pressure. Guaranteed unconditionally with money back if dissatisfied.

HOSE TESTED AT 200 LBS. PRESSURE
1½"x50' SJ. Coupled....24¢ ft. or $12.00 length
2½"x50' SJ. Coupled....35¢ ft. or $17.50 length

HOSE TESTED AT 300 LBS. PRESSURE
1½"x50' DJ. Cpld. IPT ..33¢ ft. or $16.50 length
1½"x50' DJ. Cpld. NST ..40¢ ft. or $20.00 length
2½"x50' DJ. Coupled ....54¢ ft. or $27.00 length

SEND FOR SURPLUS CATALOG S-52

FIRE FIGHT SURPLUS SALES
1355 South Flower Street
Los Angeles 15, California

FOR SALE

One Maxim City Service Ladder Truck, Year 1924—in good condition. Can be seen at Lawrence-Cedarhurst Fire Department. Can be delivered immediately. Submit all bids in writing to:

THE LAWRENCE-CEDARHURST FIRE DEPARTMENT
75 Washington Avenue
Lawrence, L. I., New York

FOR SALE

The Bridgehampton Fire Dept. offers for sale 1 G.M.C. 1½-ton Hose Truck, equipped with Koehler Lighting Unit and two 500 Watt Flood Lights.

Sealed bids will be received for the above equipment by the undersigned, to be opened on Sept. 1, 1952, at 5 o'clock P.M. The right is reserved to reject any or all bids.

All bids to be sent to W. W. Hildreth, Chief, Bridgehampton Fire Dept., Bridgehampton, N.Y.

REPRESENTATIVES WANTED

Old Well Established Firm has available several choice territories for aggressive and experienced Representatives capable of selling Municipalities. Line includes Fire Trucks, Extinguishers, Hose and Allied Products. Write Box No. 385, c/o FIRE ENGINEERING, 24 West 40th St., New York 18, N. Y.

DEALER WANTED

Top-flight dealer wanted to sell outstanding line of fire trucks in South Carolina. Full factory co-operation, prompt delivery. Reply Box 360, c/o FIRE ENGINEERING, 24 W. 40th St., New York 18, N. Y.

TERRITORY AVAILABLE

GEORGIA—Top ranking builder of custom fire apparatus desires aggressive dealer or representative to handle sales in State. Box 350, c/o FIRE ENGINEERING, 24 W. 40th St., New York 18, N. Y.

TERRITORY AVAILABLE

OHIO - W. VA. - PENN. — Experienced fire truck representative wanted to handle well known line of apparatus in tri-State area. Replies held confidential. Box 355, c/o FIRE ENGINEERING, 24 W. 40th St., New York 18, N. Y.

DEALERS WANTED

for the Fogg-It "Triple Jet" Safety Nozzle. A real fast mover! Some territories still open for qualified state-wide distributors. Write Fogg-It Sales Co., Dept. 3B, Box 1985, Modesto, California.

FOR SALE

1929 Mack Aerial Ladder Truck, 85-foot ladder. Very fine condition.

Wm. J. Carey, Sec't'y.
MERION FIRE COMPANY
35 Greenfield Avenue
Ardmore, Pennsylvania

FOR SALE

One 1928 Boyer Apparatus, 500 G.P.M. Hale Pump, 150-gallon booster tank, fully equipped. Can be seen at:

TRAUTWEIN'S, INC.
Woodbridge, N. J.

MEMCO AERIAL LADDER

The MEMCO AERIAL LADDER is an economical all-metal ladder unit designed to be installed on existing truck or to be installed on new equipment by your fire truck manufacturer. Electrically raised and lowered by power from the truck battery.

For details write . . .
MEMCO DIVISION of
DE-LUX NEON MFG. CO.
1007 N. W. 36th Street
Oklahoma City 3, Okla.

BOOKS

For the Modern Fire Fighter . . .

Recognized by the Fire Service as Standard

Questions and Answers for Lieutenant and Captain—$2.50

Promotional Study Course for Firemen—$3.00

Fire Chief's Handbook—$4.00

Fire Service Hydraulics—$3.00

(The Above Prices Are All Postpaid)

CASE-SHEPPERD-MANN PUBLISHING CORP.
24 West 40th Street
New York 18, N. Y.

it is to maintain the "outward appearances.

In a day when apparatus budgets are being held to the minimum and deliveries of new equipment for departments fortunate enough to get it on order as well as for replacement parts, are being slowed, it behooves all fire officials to maintain their rolling stock in the best possible condition. It is well to remember that fire apparatus deteriorates and "fades away" in its inactive state—as well as from wear in actual use.

Fire Service Ladders

(*Continued from page* 642)

The long ladder is lowered by reversing this procedure (Fig. 16).

Extension ladders are raised the same way as is shown in the foregoing operation for hoisting long ladders. The fly-section is usually hoisted away from the building. As the weight of the ladder to be hoisted increases, depending upon its length and type, care should be exercised to see that rope of sufficient strength is used.

New Army Signal Corps' Handie-Talkie

The Army Signal Corps has started production of a new handie-talkie radio, first units of which will go to the Korea area, it is announced. The new product will replace the old SCR-536, the handie-talkie of World War II fame.

It is claimed the new unit is the first of its type yet produced. It weighs about 6½ lbs., has a range of about one mile, and gives greatly improved performance. It can be slung over the shoulder like a miniature walkie-talkie with the soldier speaking into an attached handset. It also has the advantage of netting with a number of other new frontline radio sets, which the old handie talkie would not do.

While designed primarily to furnish platoon-to-company radio communication, the new set can also contact more powerful radios of the company and battalion, thus extending integrated radio communication to the entire front line.

Although perhaps not providing as many desirable features for fire service communications as the pack set, or walkie-talkie, this latest instrument may find a place ultimately in fire control.

Acknowledgement

Grateful acknowledgement is made to the New York Fire Department, for permission to use the illustration of the three-horse hitch shown on the cover of this Anniversary Issue of FIRE ENGINEERING.

The photograph, which shows Engine 80 of the New York Fire Department responding to an alarm, is from the exhibit in the Departmental Museum, Long Island City. The Museum contains a rich treasure of historic memorabilia pertaining to the Department, and to the nation's Fire Service. It is under the immediate direction of Deputy Fire Chief Edward Conway. His two efficient aides are Honorary Captain Clarence Meek, and Curator Walter Beatty.

WELCOME
I. A. F. C.
TO
BOSTON
THE HOME OF
WENTWORTH
"HEAD-MASTER"
AMERICA'S FINEST
FIRE FIGHTER'S
UNIFORM CAPS

VISIT OUR EXHIBIT AT
BOOTH 30

VISIT OUR FACTORY
WENTWORTH-FORMAN CO., INC.
21-23 EDINBORO STREET
BOSTON, MASS.
(OFF ESSEX ST. IN HEART OF BOSTON)

BODY-GUARD
BUNKER SUITS
FOR COMFORT & PROTECTION

WE ARE DISTRIBUTORS FOR
SIREN BOOTS
We have been supplying FIREMEN'S CLOTHING for over 25 years.
Any fireman can have a catalog by writing —
BODY-GUARD
MANUFACTURING CO.
ST. JOSEPH · · MISSOURI

GLASS*

Fire Helmets

Stronger than Steel!

New lightweight champion!

Molded *Fiberglas sets new standards for protection. Resilient construction *absorbs* blows; protects neck & spine.

Naturally insulated against heat. Radiation tests indicate 10% cooler inside. Acid and chemical resistant; non-conductor of electricity.

Greater Comfort: Weighs only 20 oz. Fully ventilated. Headband assembly self-shaping like a felt hat. Adjustable headband; one size fits all heads. Choice of black, red, or white in solid, molded colors. Write to E. D. Bullard Co., 275 Eighth St., San Francisco 3, Calif.

On Display at Scott Aviation Booth 28, I.A.F.C. Convention

EVERYTHING BULLARD IN SAFETY — HARD BOILED

Distributors in Principal Cities

© E.D.B.Co.

Hard Boiled

FIRST Name in Safety Hats—*since 1919*

ADVERTISING INDEX

ABESTO-LEATHER GLOVE CO. 720
ACME PROTECTION EQUIPMENT CO. 716
AHRENS-FOX FIRE ENGINES 587
AKRON BRASS MFG. CO., INC. 604
ALUMINUM LADDER CO. 594
AMERICAN FIRE APPARATUS CO. 595
AMERICAN FIRE EQUIPMENT CO. 704
AMERICAN-LA FRANCE-FOAMITE CORP. ..568-569
AMERICAN-MARSH PUMPS, INC. 579
AMERICAN RUBBER MFG. CO., INC. 597
AMES CO., W. R. 575
ANSUL CHEMICAL CO. 675; 715
APPROVED FIRE EQUIPMENT CO. 590
ARGUSLITE CO. 705
ATLAS SAFETY EQUIPMENT CO., INC. ..572-573
ATTWOOD BRASS WORKS, INC. 715
AUDIO EQUIPMENT CO., INC. 724

BAR-WAY MFG. CO. 698
BEACON FALLS RUBBER FOOTWEAR 693
BEAN MFG. DIV., JOHN; FOOD MACHINERY & CHEMICAL CORP. 613
BENDIX RADIO DIVISION, BENDIX AVIATION CORP. 563
BIERSACH & NIEDERMEYER CO. 679
BI-LATERAL FIRE HOSE CO. 673
BLACKINTON & CO., INC., V. H. 558
BODY GUARD MFG. CO. 727
BOSTON WOVEN HOSE & RUBBER CO. 612
BRAXMAR CO., C. G. 578
BUCKEYE IRON & BRASS WORKS 690
BULLARD COMPANY, E. D. 728

C-O-TWO FIRE EQUIPMENT CO. 677
CAIRNS & BROS., INC. 689
CARBIDE & CARBON CHEMICALS DIV., UNION CARBIDE & CARBON CORP. 722
CARDOX CORP. 601
CARPENTER MANUFACTURING CO. 682
CHESEBROUGH MFG. CO. 700
CHRYSLER CORP. 586
CIRCUL-AIR CORP. 712
CROWN BODY & COACH CORP. 592

DARLEY & CO., W. S. 680
DAYTON FIRE EQUIPMENT CO. 723
DETROIT DIESEL ENGINE DIV., GENERAL MOTORS 591
DUO SAFETY LADDER CORP. 606

E & J MANUFACTURING CO. 608
ELKHART BRASS MFG. CO., INC. 559
EMERSON CO., J. H. ..... Inside Front Cover
EUREKA FIRE HOSE DIV., U.S. RUBBER CO. 667
EVERSON-ROSS, INC. 724
EXCELSIOR BRASS MFG. CO. 714

FABRIC FIRE HOSE CO. 553
FAIRBANKS, MORSE & CO. 724
FEDERAL ENTERPRISES, INC. 551; 692
FIRE-LITE ALARMS 725
FIRE MASTER CORP. 703
FIRE WAGON, INC. 719
FIREWATER COMPANY 723
FOGG-IT SALES CO. 682; 723
FOUR WHEEL DRIVE AUTO CO. ..... Back Cover
FULTON BAG & COTTON MILLS 699

GAMEWELL COMPANY 614
GENERAL DETROIT CORP. 607
GERSTENSLAGER CO. 574
GLOBE MFG. CO. 717
GOLD CREST SAFETY EQUIPMENT CORP. .. 718
GOODRICH CO., B. F. 555
GORMAN-RUPP CO. 696

HALE FIRE PUMP CO. 571; 711
HALLIGAN TOOL CO. 707
HALPRIN SUPPLY CO. 721
HANNAY & SON, INC., CLIFFORD B. 693
HARODIKES, INC. 687
HARRINGTON SIGNAL CO. 718
HEWITT-ROBINS, INC. 722
HI-PRESSURE FOG EQUIPMENT CO. 707
HOMELITE CORP. 588
HOWE FIRE APPARATUS CO. 694

INTERNATIONAL HARVESTER CO. 583, 584

JANESVILLE APPAREL CO. 712

KELLAM MFG. CO. 709
KIDDE & CO., INC., WALTER 669
KOEHLER MFG. CO., INC. 722; 723
KOHLER COMPANY 713

LANE, E. B. 722
LEECE-NEVILLE CO. 711
LEGGE CO., WALTER G. 709

McCULLOCH MOTORS CORP. 610
McDERMOTT CORP., J. A. 669
McINTIRE BRASS WORKS, F. N. 580
MANN EDGE TOOL CO. 695
MARINE PRODUCTS CO. 709
MAXIM MOTOR CO. 576-577
MEMCO AERIAL LADDER 727
MIDWESTERN MFG. CO. 582
MINE SAFETY APPLIANCES CO. 580-581
MINNESOTA FIRE EQUIPMENT CO. 708
MORNING PRIDE MFG. CO. 723
MOTOROLA, INC. 566
MYERS & BRO. CO., F. E. 585

NATALE MACHINE & TOOL CO. 709
NATIONAL FOAM SYSTEM, INC. 683
NICEROL LIMITED 596
NIEDNER'S SONS CO., CHAS. 701
NOTIFIER MFG. CO. 713

OBERDORFER FOUNDRIES, INC. 688
ONAN & SONS, INC., D. W. 721
OREN ROANOKE CORP. 589
OWENS-CORNING FIBERGLAS CORP. 570

PACIFIC MARINE SUPPLY CO. 691
PAC-KIT CO., THE 723
PERFEX 682
PIRSCH & SONS CO., PETER ..... Inside Back Cover
POTTER FIRE ESCAPE CO. 596
POWHATAN BRASS & IRON WORKS 580
PYRENE MFG. CO. 681

QRS NEON CORP. 709
QUAKER RUBBER CORP. 671

RADIO CORPORATION OF AMERICA 685
REPUBLIC RUBBER DIV., LEE RUBBER & TIRE CORP. 582
ROCKWOOD SPRINKLER CO. 556-557
RUSSELL UNIFORM CO. 725

SAFETY FIRST PRODUCTS CORP. 694
SCOTT VITION CORP. 567
SEAGRAVE CORP. 560-561
SHARPSVILLE STEEL FABRICATORS, INC. 697
SIRENO CO., INC. 695
SMITH & CO., D. B. 585
STEPHENSON CORP. 554
STERLING SIREN FIRE ALARM CO., INC. .. 704
SUPERIOR AMERICAN FIRE ALARM & SIGNAL COMPANY 611

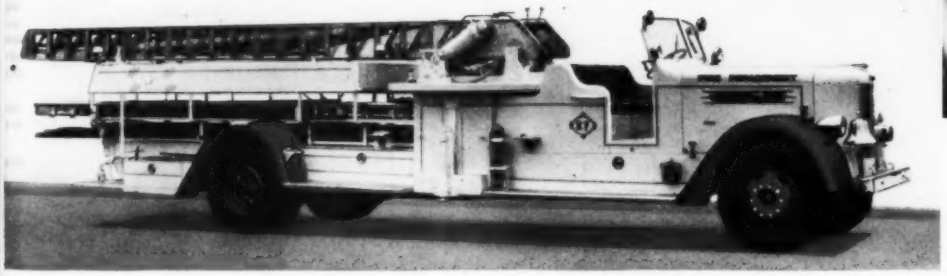
TRIPPE MANUFACTURING CO. 667

U-C LITE MFG. CO. 725
UNION CARBIDE & CARBON CORP., CARBIDE & CARBON CHEMICALS DIV. 722
UNITED STATES MOTORS CORP. 710
UNIVERSAL FIRE APPARATUS CORP. 684

VONNEGUT HARDWARE CO., VON DUPRIN DIV. 702

W-B MANUFACTURING CO. 681
WARD LAFRANCE TRUCK CORP. 685
WATEROUS COMPANY 701
WAUKESHA MOTOR CO. 584
WELDERS SERVICE CO. 726
WENTWORTH-FORMAN CO., INC. 727
WIRT & KNOX MFG. CO. 719
WOOSTER BRASS CO. 688

ZIERDEN CO. 717



PERFORMANCE ABILITY

Ability to perform under conditions, and in locations which you cannot previously select requires an aerial ladder truck which has flexibility, maneuverability and speed in operation. The Pirsch Aerial has these features, including hoisting and ladder operating speeds which are unequaled.

The Pirsch Aerial is not only America's First All-Powered Aerial, but is America's finest aerial.

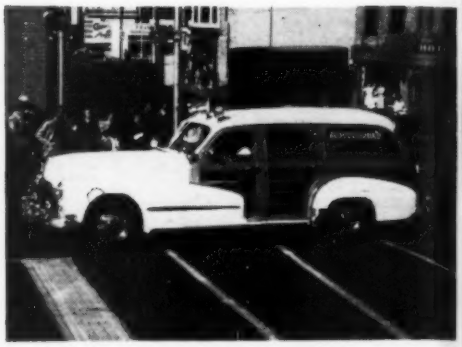
Pirsch 65' Intermediate Aerial shown above delivered to City of Baltimore, Md.

PETER PIRSCH & SONS CO. KENOSHA, WIS.

"BUILDERS OF AMERICA'S FIRST ALL-POWERED AERIAL LADDER TRUCK AND AMERICA'S FIRST 100' AERIAL LADDER"

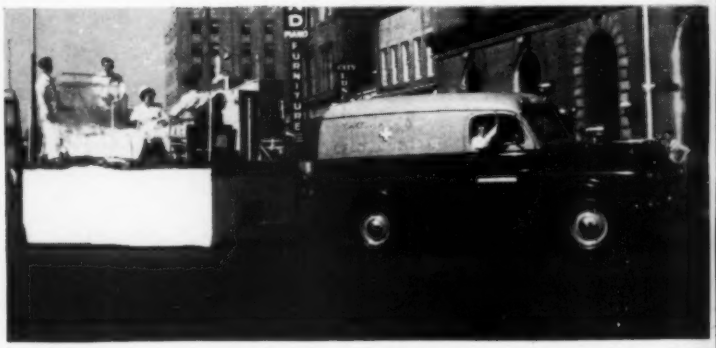
EMERSON PROTECTION

Christiansburg Life Saving and First Aid Crew



Clifton Forge Fire Department Rescue Squad

Bristol Life Saving Crew



Williamson Road Life Saving Crew

Hunton First Aid and Rescue Squad

Altavista Life Saving and First Aid Crew

More of the rescue cars in the parade of the International Rescue and First Aid Association at its 1951 convention.

Do you, too, carry an Emerson to protect the lives of your men and your community?

EMERSON RESUSCITATORS **EMERSON IRON LUNGS**

J. H. EMERSON COMPANY

22 COTTAGE PARK AVENUE, CAMBRIDGE 40, MASSACHUSETTS

EERING for SE

N

Squad

ng Crew

Aid Crew

t
?
UNGS

Y
TS